VOL. 176 No. 5 MAY, 1952

AMERICAN Gas Journal

JUN -3 1952

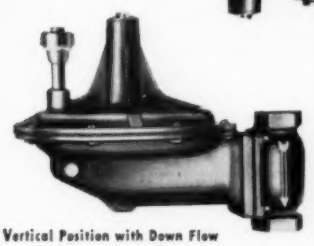
A *Reynolds* REGULATOR
THAT WILL HANDLE INLET * PRESSURES UP TO 750 POUNDS

★ *by using a bronze inlet unit . . .*

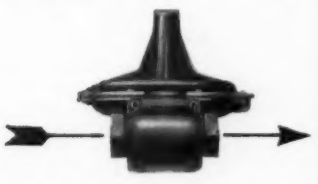
REYNOLDS REGULATOR NO. 1-2 MODEL 30 NR-8200 SERIES

A Reynolds Regulator that will handle inlet pressures up to 750 pounds reducing same to pounds. Unequalled in efficiency either as a single unit or in multiple reduction. Let Reynolds help solve your gas control problem.

Up Flow with Inverted Position



Vertical Position with Down Flow



Normal Horizontal Position with Flow from Left to Right

Normal Horizontal Position with Flow from Right to Left

4 INSTALLATION POSITIONS

8200 Series Regulators are quickly installed in existing piping. Spring Top operates pointing up or down. May be installed in any position on a 90° setting. Orifice can be changed at any time. Only an Allen wrench is needed to inspect orifice or valve pocket.

IN ALL COMPARISONS THE STARTING POINT AND ALL PRESSURE CONDITIONS SHOULD BE IDENTICAL

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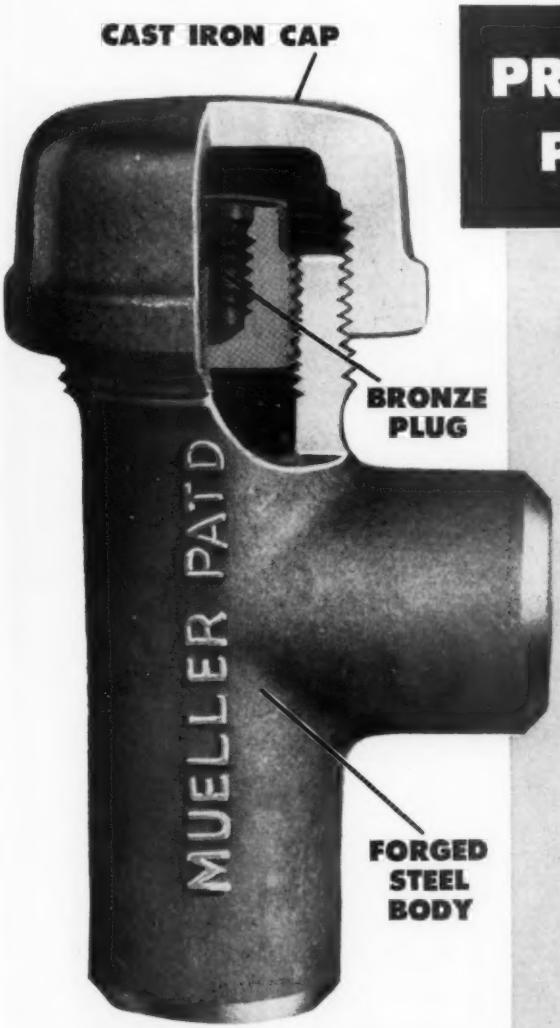
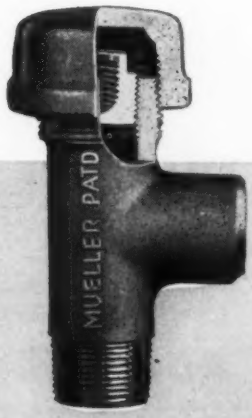


PRESSURE PROOF



EASY to install under pressure without shutting off gas or permitting it to blow.

•

SAFE to install . . . safe throughout the years. Will withstand greater pressure than main to which they are attached.

•

PRACTICAL to service . . . with proper equipment, service may be shut off at any time.

•

PERMANENT as the main itself. Machined from solid steel forging. Double leak-proof seal.

•

FAST to install with Mueller "E-4" or "T" Drilling Machines. Have built-in drill guide feature.

THREADED INLET SERVICE TEE

•

TWO TYPES OF INLETS . . . welding for steel mains or threaded for cast iron gas mains.

•

ANY TYPE OF SERVICE CONNECTION . . . welding, mechanical, Inside or Outside thread.

ANOTHER NO-BLO PRODUCT

WELDING INLET SERVICE TEE

■ It's easy . . . safe . . . practical . . . fast . . . to make gas service connections under pressure with Mueller NO-BLO gas service equipment. Mueller Service Tees, described above, are only part of the team. Mueller offers a wide variety of NO-BLO equipment and fittings including Line Stopper Fittings, Save-a-Valve Drilling Nipples, Service Valve Tees, Service Clamps, and many others including gas service installation tools. For information about the complete line, see Catalog 55 or write.

MUELLER CO.

Dependable Since 1857

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SERVICE TEES

AMERICAN GAS JOURNAL, May, 1952. Vol. 176, No. 5. Published monthly (except August, then semi-monthly), by American Gas Journal Inc., at 73 Main Street, Brattleboro, Vt. Entered as second class matter January 24, 1950, at the post office at Brattleboro, Vt. under Act of March 3, 1879. Executive and editorial offices at 205 East 42nd St., New York 17, New York. Subscription prices, U.S. $3 per year; Canada $4; Foreign $10. Single copies 50 cents, except August 15 issue which is not sold separately. Printed in U.S.A.

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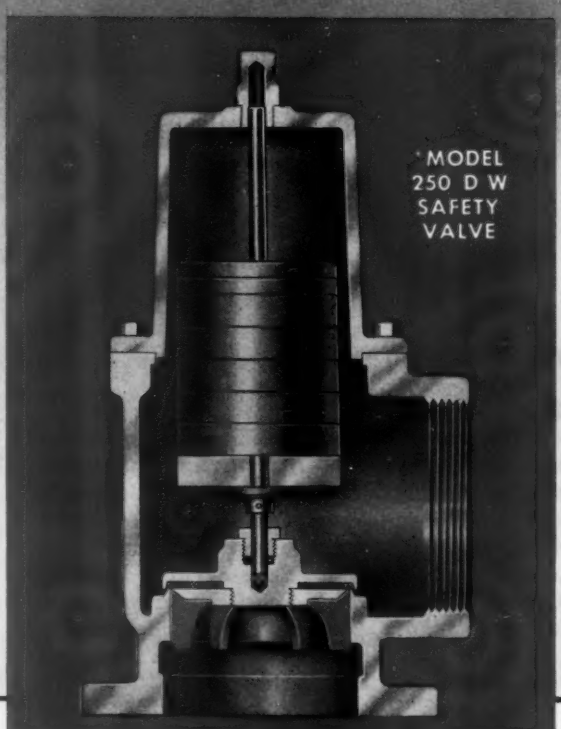

*Also Spring Type 250 S and Weight and Lever Type 250WL

ACCURATE CP MFG. CO. DEPENDABLE

SV-52-1

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MANUFACTURING COMPANY

Pittsburgh 25, Pennsylvania

AMERICAN Gas Journal
ESTABLISHED 1859

VOLUME 176 MAY 1952 NUMBER 5

This month...

Readers of this issue of AMERICAN GAS JOURNAL will be struck—right between the eyes, we anticipate—by the new section, *American Gas Merchandising,* which is gaudily introduced with its own title page (page 53).

Having lectured the industry in stern and uncompromising terms on the necessity for an immediate and drastic improvement in its merchandising and selling practices, we are prepared to make our own contribution toward that end—as indeed we should, if we believe in the efficacy of our own medicine.

The new monthly section, *American Gas Merchandising,* will be that contribution. It is predicated on the basic assumption that every gas utility must set the pace and, by example, establish and maintain the standards of appliance merchandising that are to prevail in its own territory.

Appliance manufacturers' promotional plans, utility and dealer sales campaigns, news on new merchandise and new merchandising ideas will be treated impartially and presented on their merits.

Standing, as it will, as a separate and complete source of sales information and ideas, *American Gas Merchandising* will serve, we trust, as both an inspiration and a guide to better and more effective merchandising policies, now the predominant concern of the entire gas industry.

• • •

AMERICAN GAS JOURNAL net paid circulation has doubled since the May 1949 issue. That's the announcement that we have been waiting to make; it is now an accomplished fact. Lest the brash unqualified statement sound boastful, let us confess; it was a photo-finish. But we made it!

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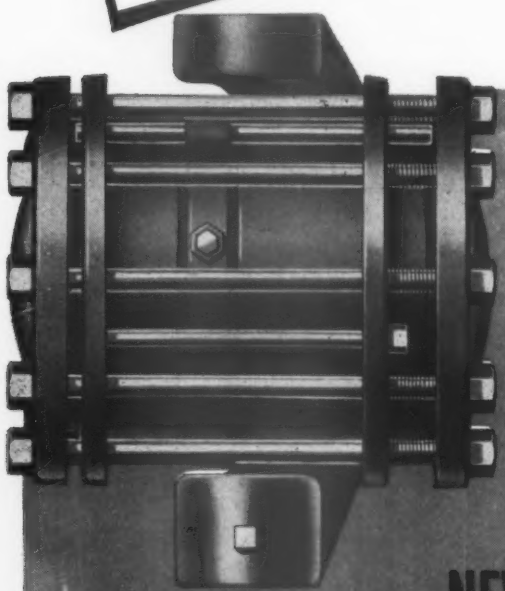
THE NEW

A MERCURYLESS METAL

SUPPLEMENTING



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For differential pressure applications where accurate measurement is required without the use of a mercury manometer, American Meter Company now offers a bellows actuated instrument designed and built with characteristic American precision in ranges of 50", 100" and 200" for working pressures to 1,000 P.S.I. These new instruments are designed for ease of installation, accurate performance and minimum maintenance under rugged operating conditions.

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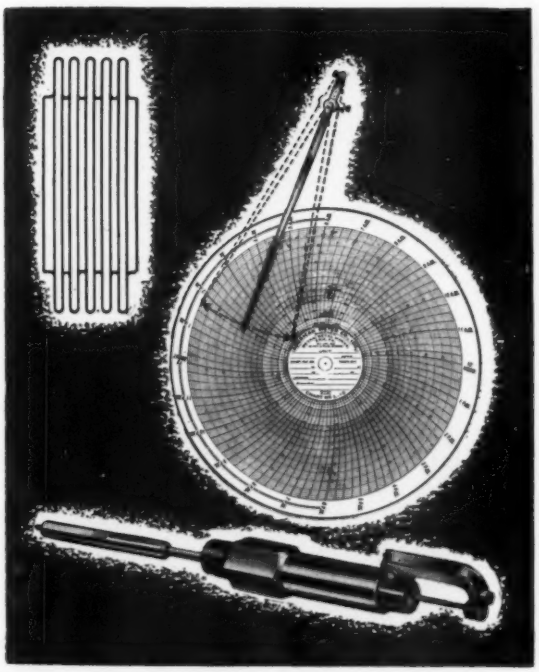
BELLOWS DIFFERENTIAL PRESSURE INSTRUMENT

THE AMERICAN WESTCOTT MERCURY MANOMETER ORIFICE METERS



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  Large area, fluid filled, *seamless* stainless steel bellows provide longer service life with minimum possibility of leaks caused by metal fatigue.

- **DIRECT FULL SCALE RECORDING PEN MOVEMENT— NO EXTERNAL GEARING OR LINKAGE MULTIPLICATION**

  Recording pen arm travels through the full 22½ degree arc without complex external gearing or linkage multiplication. Standard American Westcott charts are used.

- **AMERICAN TYPE "B" TEFLON SEAL STUFFING BOX NEEDS NO LUBRICATION**

  Noted for simplicity, this nearly frictionless precision unit provides maximum accuracy . . . *Requires No Lubrication.* All stuffing box parts are removable and replaceable in the field . . . *No Shaft Freezing; No Leakage.*

- **STAINLESS STEEL INTERNAL WORKING PARTS**

  All internal operating parts of the new DRI-FLO Orifice Meter are of stainless steel except the ground and polished stuffing box shaft which is Monel metal. Body is cast steel.

- **READILY ACCESSIBLE FOR CLEANING**

  The meter body and internal working parts are easily accessible for inspection, calibration and cleaning by removing one or both case cover heads . . . without disturbing manifold piping.

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INCORPORATED ESTABLISHED 1836

AMERICAN METER COMPANY EST. 1836 MEASUREMENT ENGINEERS

How To *Manage*

Rockwell pilot loaded regulators controlling gas pressures to scrubbers outside a refinery in Louisiana.

ROCKWELL **Balanced Valve**

Pressures On *Big* Lines

WITH ALL TYPES OF ROCKWELL REGULATING CONTROLS

For safe, sensitive pressure controls on big lines make your selection from the complete line of Rockwell regulators. You have your unrestricted choice of size and type. And with Rockwell regulators in service you can quickly adapt them to handle the varied conditions of capacity or pressure that may arise in the future. This is done by changing the inlet bowl (valve chamber) assembly, a simple operation that can be done with the regulator in the line if desired.

HOW TO MASTER SERVICE PROBLEMS . . . AND SAVE!
Illustrating how the valve chamber can be removed as a unit and replaced through a hand hole area in the regulator body.

The Rockwell removable inlet bowl brings big savings to you who use big regulators. With it you can size an existing Rockwell regulator up or down to take care of increased or decreased demands. You can use either a new or rebuilt assembly having soft, semi-steel or tool steel seats. Many utilities take advantage of this feature to meet seasonal demands. Write or phone nearest district office for full details.

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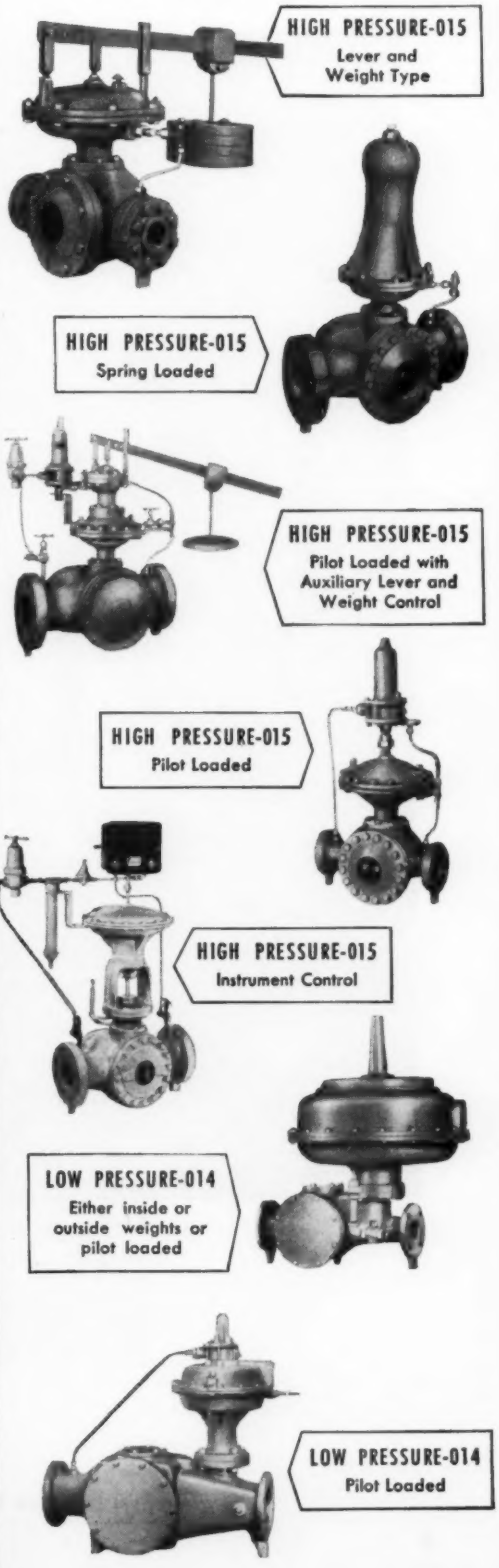
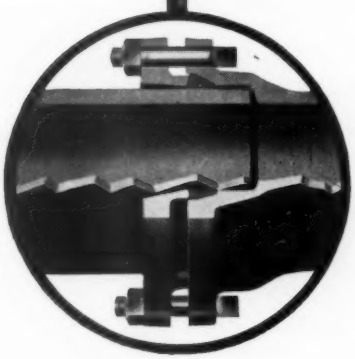


Many important gas utilities have *standardized on standardized mechanical joint cast iron pipe* for new mains carrying all types of gas at low, intermediate and high pressures.

CAST IRON

Cast Iron Pipe Research Association, T. F. Wolfe, Managing Director, Peoples Gas Bldg., Chicago 3.

WHEN YOU BACKFILL an installation of standardized mechanical joint cast iron pipe you are sure of the two fundamental factors in economical gas distribution—long life and bottle-tight joints. More than two-thirds of the 43 largest cities in the United States have part or all of their *original* cast iron gas mains in service—some for more than a century.



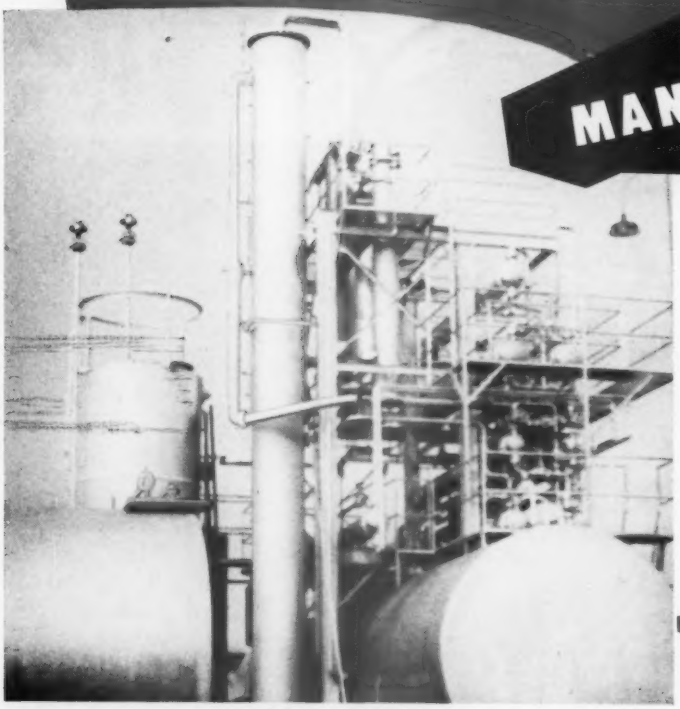
standardized mechanical joint

CAST IRON PIPE

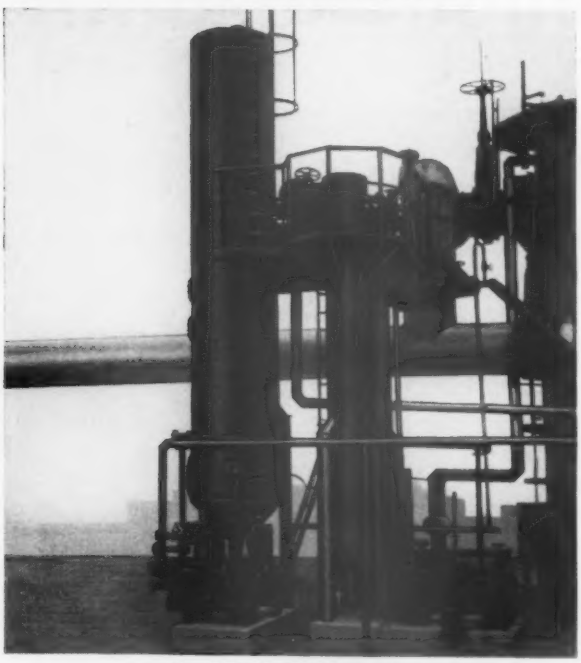
WHEN INSTALLING proves to be speedy and easy, time after time, you appreciate another advantage in standardizing with standardized mechanical joint cast iron pipe. More footage can be laid per day with minimum equipment and with less delays in wet weather and less difficulty with wet trenches. More than a quarter-century of experience has demonstrated the speed and simplicity of its bottle-tight construction. More than a century has proved its long life.

how to make a *PROFIT* from MANUFACTURED GAS...

we suggest Light Oil Recovery



Light Oil Recovery System



Tar Dehydration Apparatus

The Gas Utility Executive today knows about the cost increases for raw materials going into manufactured gas. But has he explored the markets for light oils and other by-products?

Mounting demands for synthetics, and chemical products generally, have placed a premium on the value of benzol and light oils.

A study of your situation might show:

A. That by-product values will reduce your net gas cost to a lower figure than was ever before possible.

B. That peak shaving gas can be made from oil at a net cost comparable to prevalent commodity and demand charges for natural gas.

The Gas Machinery Company offers equipment for efficient Gas Scrubbing with apparatus for Recovery of valuable Light Oils. Every consideration is given heat exchange, automatic control, safety, continuity of operation and other prime factors.

May we make one more suggestion — let us also install modern equipment for Tar Dehydration and Tar Handling. Tar values are increasing too.

Consult us first. We'll give you prompt and competent assistance in your planning.

THE GAS MACHINERY COMPANY

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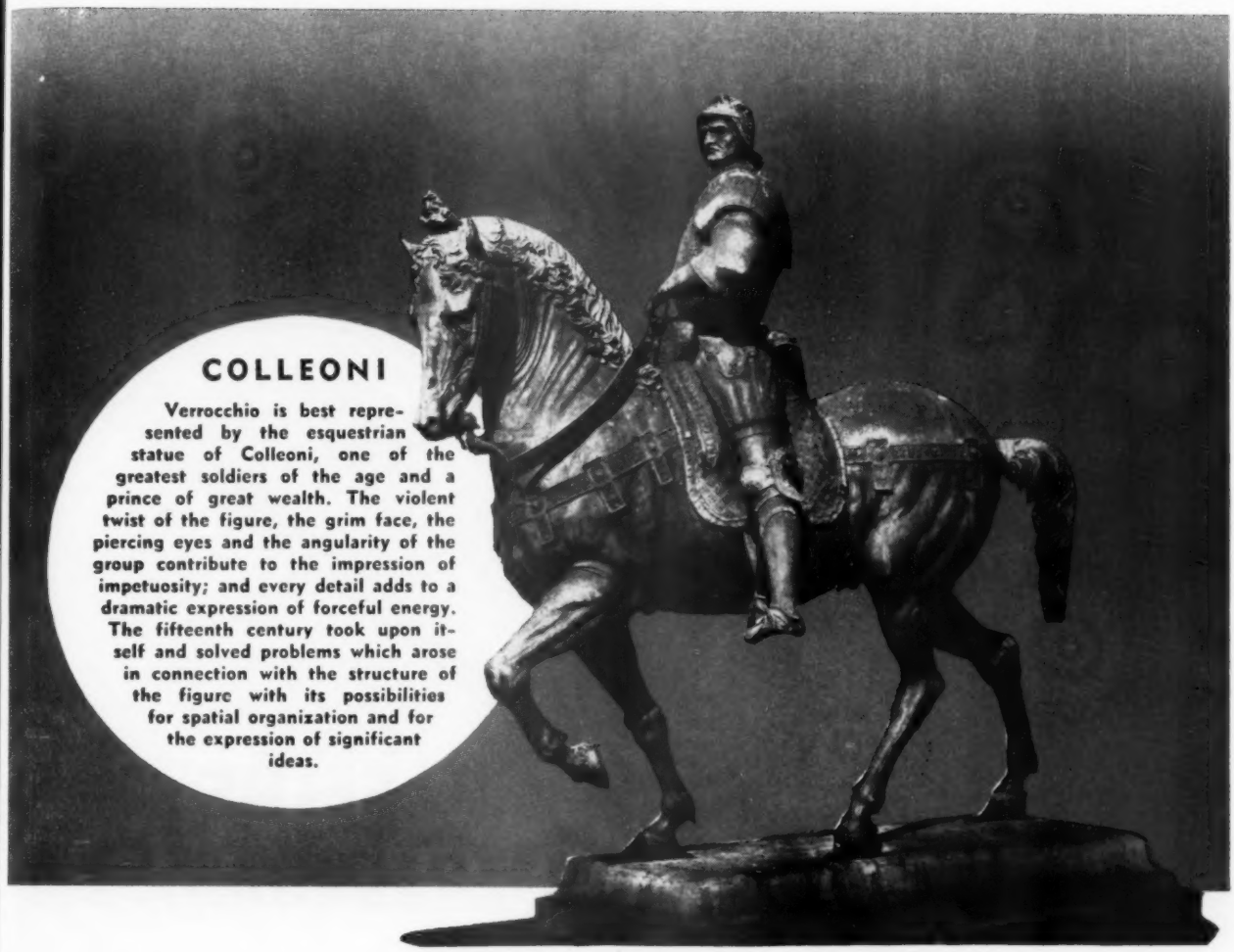
COLLEONI
Verrocchio is best represented by the esquestrian statue of Colleoni, one of the greatest soldiers of the age and a prince of great wealth. The violent twist of the figure, the grim face, the piercing eyes and the angularity of the group contribute to the impression of impetuosity; and every detail adds to a dramatic expression of forceful energy. The fifteenth century took upon itself and solved problems which arose in connection with the structure of the figure with its possibilities for spatial organization and for the expression of significant ideas.

ART WITH A POWERFUL MESSAGE

In his great work, the statue of Bartolomeo Colleoni, the artist-sculptor Verrocchio has produced an equestrian statue without equal. It tells the story of his patron, the Prince Colleoni, at a glance.

CAPTAN tells a powerful story too, through the sense of smell.

For expert help in gas odorization, call on the Captan Man. He knows how to put the proper CAPTAN to work for you. His services go along with your use of CAPTAN.

A letter or telephone call will bring him to your office. Call on his help today.

captan

NATURAL GAS ODORIZING CO., INC.
P. O. BOX 1645 HOUSTON, TEXAS

No. 1 of a Series

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SELAS

Gradiation®

Results like this are typical of Selas methods in heat processing. Not content with older, conventional processes, Selas has engineered new and faster ways of heating with gas.

Directing millions of Btu's toward an area to which conventional equipment would have released thousands, Selas Gradiation heating has harnessed gas to heat pipe as fast as it can be produced in the mill. Savings in scarce materials, time and dollars are one result . . . increased amounts of pipe for all users, including the gas industry, is another.

Equally outstanding are new methods introduced by Selas to the petroleum, glass, textile, chemical, printing and ceramic industries . . . to name only a few.

Some of these other accomplishments used Selas Gradiation heating . . . others involved entirely different techniques. All applications had this in common . . . a new approach to the requirements for heat processing, using gas as the heating medium. In each case Selas had the experience needed . . . for either standard or custom-built heat processing systems.

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Spare Tire for Gas Companies

• Koppers now has available a furnace for producing gas from fluid hydrocarbons, gaseous and liquid—the Koppers-Hasche Furnace. It is a spare tire for the utilities which distribute natural gas and industrial plants which use natural gas. That's because it can produce manufactured gas and pinch hit in the event of temporary failure of the natural gas supply.

Further, manufactured gas made by the Hasche Furnace *mixes readily* with natural gas. Therefore, during peak-load periods, utility companies can add this manufactured gas and keep their supply up to demand.

This new gas-producing plant isn't limited to standby service. Companies can convert from carbureted water gas or coal gas to Hasche Reformed Gas — *without* the tremendous cost of changing customers' appliances. Also, by using the Hasche Furnace, smaller gas companies can produce gas at a cost comparable to the larger gas companies.

The investment cost of the Koppers-Hasche Furnace is low — lower than that of any other equipment for producing manufactured gas. Operating cost is also low; efficiency is high. Write to us for full information on the Hasche Furnace.

KOPPERS

KOPPERS COMPANY, INC.

Engineering and Construction Division, Pittsburgh 19, Pa.

Welcome to AGA

and members of the

Natural Gas Department

SOUTHERN CALIFORNIA is an appropriate setting for your 1952 meeting of the AGA Natural Gas Department, because natural gas has long been basic to the economy of this area. Since the first use of natural gas 46 years ago, Southern California has steadily advanced to first place in the West in industrial, commercial and domestic use.

SOUTHERN CALIFORNIA GAS COMPANY

SOUTHERN COUNTIES GAS COMPANY

Editorial:

A Lasting Service

THE Gas Appliance Manufacturers Association has completed its first year of an organized and, we believe, thoroughly effective public relations program; the first effort of its scope and magnitude in the history of that organization and, for that matter, of the entire gas industry.

The operation has had its many facets. Some have been spectacular; a few hotly controversial and one or two, perhaps, may have fallen short of the goals that early-enthusiasm envisioned.

But there has been one accomplishment, the significance and long term value of which are not even open to question. That is the inauguration, institution and successful completion of a pilot course in gas appliance selling, conducted by the evening and extension division of the City College of New York.

Already, the implications of this successful pattern for sales training, under university auspices, transcends the limits of anything that a trade association or a private company could hope to accomplish. The formula has been developed into a successful course in appliance selling methods that can be added to the curriculum of any college or university favorable to the pragmatic approach to adult education. Dr. Robert A. Love of CCNY envisions it as an opportunity not only for the gas industry, but for all of the members of the Association of University Evening Colleges.

In serving as a liaison between industry training and adult education at the college level, GAMA has performed a unique and lasting service, not only to its own members but to the gas utility industry as well.

The Crying Room

A RECENT PRESS RELEASE from AGA headquarters on the Mid-West regional gas sales conference, reports Mort Farr, president of the National Radio and Appliance Dealers Association as "begging the gas sales representatives not to be too defeatest in their attitude and outlook." He offered the cooperation of the thousands of dealers throughout the country who are members of his association, in the industry's merchandising plans.

With all due respect, if any respect is due, we submit that things have come to one hell of a sorry pass if a representative of the retailers' group has to give the gas industry the psychological needle before its members will get out and merchandise the equipment on which their very survival depends.

In reality the gas industry should be stiffening the backbone of the dealers, instead of hanging back waiting for the dealers to coax them out of the crying room. Manufacturers of appliances and distributing gas utilities alike should be encouraging them at every turn, and to greater effort. They should be educating the dealers to take advantage of every promotional aid, every sales argument, every modern feature that can be dramatized to the public and converted into more sales.

We have attended innumerable business meetings, sales conferences, press previews, seminars, clinics and round table discussions in recent months and the theme invariably has been the need for better and more intensive selling effort. The note of urgency has at times slipped up the scale to the pitch of near hysteria.

There is ample justification for the fears that are expressed. In the face of growing consumer apathy toward the purchase of major appliances, the electrical industry has stepped up its promotion. It may not be able to completely rout the buyers strike, but we can rest assured that it will get more than its share of what is bought, unless the gas industry steps up the tempo of its own promotional activities.

There has been a new vogue of late, in which the manufacturers of gas appliances have sent representatives to utilities' meetings to lay down the law on how they should conduct their selling practices. Many times their critical approach to the subject has been justified; but let us urge the manufacturers not to lose the capacity for critical self-evaluation of their own activities.

When a manufacturer faced with a temporary shortage of steel, or the necessity for using plastic instead of copper, or the threat of a strike in his plant, suddenly runs for cover, cuts down on his own selling efforts, and cancels his advertising, he is not in a very strong position to harangue the gas utilities on the subject of their promotional lethargy.

Two conditions prevail today that should make for an ideal marketing climate for gas appliances. In the first place there are plenty of them available, and second there is more than ample purchasing power to buy them. All that is needed is confidence and intelligent promotional drive. Philadelphia is demonstrating that gas ranges can be sold; Cleveland has proven it in laundry dryers and incinerators; Southern California in gas fired refrigerators; Columbus and Houston with year 'round air conditioning.

If the gas industry, looking at the results of these efforts, is unable to see the golden opportunities that are waiting only for the touch of an inspired and courageous hand it needs no further merchandising counsel. It needs mass psychiatry.

Elliott Taylor

California and Natural G

by Arthur Rohman
Western Editor

IN THE YEAR 1847, only 850 people lived along the shores of the great San Francisco Bay. In 1848, John Marshall discovered gold at Sutter's Mill near Sacramento. The news flashed around the world. Hordes of adventurers from every country and clime set out for the Golden Gate. They came by ships and overland by covered wagon. By 1850, the official census for California listed 92,597 souls.

San Francisco had begun to assume the characteristics of a metropolis by 1854. In that year, the construction of a gas manufacturing plant in the city heralded the birth of the gas industry in California.

Gas association formed early

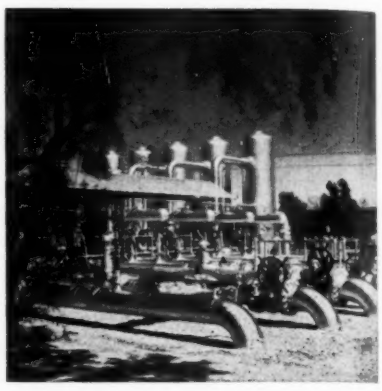
By 1870 San Francisco had grown to 150,000, but Los Angeles, a sleepy pueblo of 5,700 inhabitants, had not yet awakened. The State's population had grown to 864,694 by 1880, and nearly all important cities enjoyed gas service. In 1893, the Pacific Coast Gas Association was formed to "promote business, to exchange knowledge, and to develop a fraternal feeling among its members."

The long record of achievement of that Association and the men who founded it and nurtured it to maturity is a part of the American Story—the fulfillment of the dreams of individual men working in freedom together towards a common objective.

From these small beginnings, a century ago, there has developed a group of the country's most efficient, well-integrated, and, for the most part, privately-owned and -financed gas utility systems. Northern and central California are blanketed by the transmission lines and distribution systems of the Pacific Gas and Electric Company. In the southern half of the state, Southern California and Southern Counties Gas Companies, subsidiaries of Pacific Lighting Corporation, unite to form the world's largest natural gas distributing system. Other large utilities serving the state are Coast Counties Gas and Electric Company, Santa Cruz, San Diego Gas and Electric Company, and the publicly-owned Municipal Gas Department of Long Beach. Southwest Gas Corporation is a growing operation in the thriving eastern Mojave Desert area.

$900 million invested in utilities

A quarter of a century ago, plant investment of all California companies was well under $200 million. Today, the combined plant investment of just three of the state's utilities, P.G.&E., Southern California and Southern Counties, totals $720 million.



View of Blythe Compressor Station, jointly-owned and operated by Southern California and Southern Counties gas companies. Texas gas enters California here at the rate of 405 million cubic feet per day.

On the Pacific Coast in 1925 there were 55 gas companies serving 1,250,000 customers in some 375 communities. Annual sales of 100 billion cu. ft. brought in gross revenues of $60 million. In 1951, investment in Pacific Coast utilities was close to $900 million with 40 gas companies serving 3 million customers in more than 1,000 communities. Sales exceeded 600 billion cf, revenues approximated $225 million.

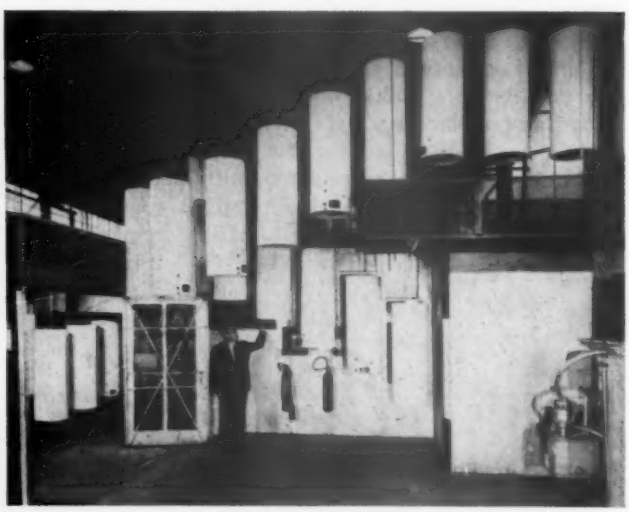
The importance of the California industry in this picture is shown in the combined figures of Pacific Gas and Electric Company and Pacific Lighting Corporation for 1951. These two utilities served 2,742,311 customers a total of over 400 billion cf of gas to bring in total revenues of more than $213 million.

California gas developed in 4 eras

In tracing the course of its growth, the development of gas service in California falls roughly into four periods.

The manufactured gas era. Between 1854 and the early 1920's, manufactured gas was the principal fuel for lighting, cooking, water heating, and other commercial and industrial uses. Discoveries of oil, accompanied by residue gas, in the early 1900's marked the beginning of the end for manufactured gas, which

Gas appliance manufacturing has become one of the important industries of Southern California. Below, shells for gas-fired water heaters coming out of the production-line drying oven in the Mission Appliance Corporation plant, Los Angeles.



GA Story of Pioneers

today, except for some standby use, is virtually unknown in California.

The natural gas era. Natural gas was first served in California in 1907 to the City of Santa Maria, a small town a hundred or so miles north of Los Angeles. Extensive discoveries of oil were made in the state between 1914 and 1928, and it was a natural economic development for the gas which occurred to replace manufactured gas.

By 1930 all the principal population centers in the state had been converted to natural gas service. Petroleum and natural gas are now the state's two most valuable minerals.

Era of intra-state supply. During the boom development of the oil industry in California, prior to 1932, oil-well or residue gas was plentifully available or in excess of all firm demands. The "interruptible" industrial market was developed to utilize so-called surplus gas during the summer, and with all requirements completely met by the producing oil companies, there was no need for the gas industry to develop its own sources of supply.

The unconserved California gas production had been reduced to a reasonable minimum, by 1932, and the problems of peak loads became of more concern to the industry. Some relief to the problems of equating daily and seasonal loads, particularly in northern California, was provided in the period 1934-1936 through the discovery and development of additional dry gas fields, such as Rio Vista, near San Francisco.

During the past decade the intra-state supply picture has grown steadily darker. Now there is virtually no gas wastage in the California oil fields; unconserved gas in 1951 was less than one per cent of total production. Use of increasing volumes of gas for pressure maintenance or repressuring oil fields has seriously limited the immediate availability of California-produced gas.

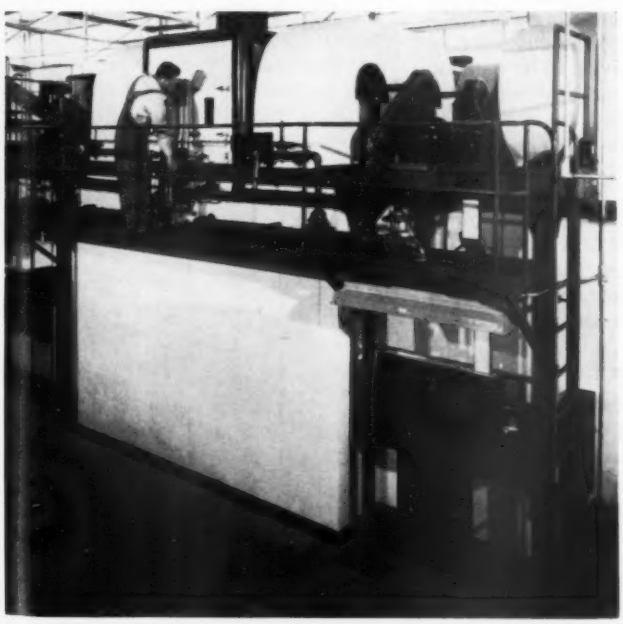
There have been few notable discoveries of oil in recent years, and no discoveries of major dry gas fields since Rio Vista, in 1936.

In the ten years, 1938-1948, "firm" sales tripled and "interruptible" sales doubled. This trend has been accelerated in more recent years by increasing population, higher individual domestic consumer use, and greater demands by defense and other industries.

As early as 1942, with California reserves at their highest level, management of the California companies recognized the need for additional sources of gas from outside the state's boundaries.

Era of Out-of-State Supply. This foresight and anticipation of growth, in the early 1940's, led California utilities to negotiate contracts with El Paso Natural Gas Company for the construction of a 1200-mile, large diameter transmission line to import into the state between 800 and 900 MMcf daily from New Mexico and western Texas. Contracts were written to run through the year 1968, and the gas was to be divided approximately equally between the state's two large gas utility systems, P.G.&E. and the Pacific Lighting subsidiaries.

Drying ovens operated with natural gas, in the new American Can Company plant, bake enamel on tinplate for cans designed especially to package California food products such as fish.



More out-of-state gas needed

The line was completed and first deliveries to southern California were made in 1947. Since that time additional facilities have been completed, enabling El Paso Natural to meet contract deliveries of 405 MMcf daily to southern California and 400 MMcf daily to the San Francisco Bay area.

In 1950, P.G.&E., Southern California and Southern Counties Gas Companies advised El Paso Natural of the need for 300 MMcf daily, in addition to the amounts already under contract. Of this additional amount 200 MMcf will be needed by November, 1952, and the remainder by the latter part of 1953.

To meet this new need, El Paso has already applied to FPC for permission to increase deliveries by 200 MMcf daily from the Permian Basin and by 120 MMcf daily from the San Juan Basin. In addition to supplying the 300 MMcf requested by the California companies, these deliveries will also provide 20 MMcf daily to Nevada Natural Gas Pipe Line Company for service to Las Vegas, Nev., and surrounding territory, if that company's pending application is granted.

In the meantime, El Paso Natural has obtained an FPC certificate authorizing a 100 MMcf increase in daily delivery capacity to serve its customers in western Texas, New Mexico and Arizona. This expansion is expected to be completed by July, 1952, at an estimated cost of $23,500,000. El Paso reserves, available to California, have been given a life of 30 years.

California's growing need for out-of-state gas supply was summed up by F. M. Banks, president and general manager, Southern California Gas Company, in an article in *California—The Magazine of the Pacific.*

"Although the present supply from within and without the state is enough to satisfy the firm requirements of the more

(Continued on page 34)

Appliance Servicing by Gas Utilities

by Frank H. Trembly, Jr.
Vice President
The Philadelphia Gas Works Company

ONE OF THE MOST pressing problems squarely facing the gas industry today is the determination of the degree of utility obligation and responsibility for appliance servicing. Attention has been drawn to the great differences in utility policies regarding servicing by the adverse publicity that the industry has received during the past eighteen months, and which has been considered by many to be the result of improper appliance adjustment.

Utility policies are quite diverse—some utility managements have given consideration to the elimination of servicing expense as a more pleasing alternative to a rate increase; while in the opinion of many others in the industry, utility appliance servicing is a valuable asset—an ace in the hole—that should be more extensively practiced to the lasting benefit of the gas business.

The executive board of American Gas Association recognized the importance and seriousness of this situation when it authorized the formation of a special committee on customer service responsibility to study this problem and to submit recommendations to the industry. This committee, under the chairmanship of Mr. Howard B. Noyes, vice president, Washington Gas Light Company, is now functioning and, in the course of its work, will consider all fundamental aspects of this subject.

While a full study is yet to be made, it would appear that those companies most enthusiastic about a "free" servicing policy are more often the straight gas utilities that are in a competitive situation, and which have an aggressive and acquisitive attitude toward the residential gas load. With a greater realization in other areas of competitive influences at work, gas utility managements should become increasingly conscious of the load-retentive possibilities of utility appliance servicing.

There has been a tendency, particularly in combination utilities, to apply the same policies to the servicing of both gas and electric appliances. In some cases, this has resulted in the utility withdrawing entirely from all appliance adjustment and parts replacement, leaving such work to be done by private agencies. With electric appliances this may prove satisfactory, as when they fail, they generally do so completely, making the attention of a service man mandatory. On the other hand, gas appliances, regardless of their condition, may continue to function but become less efficient in time without adjustment. This fundamental difference, in the writer's opinion, makes a different servicing policy for gas and electric appliances absolutely necessary.

The industry may be interested in the point of view of a straight gas company that considers prompt and efficient appliance adjustment service, supplied by the utility without direct charge, a very necessary part of an aggressive and expanding gas utility program. It seems that many other gas utilities have similar policies.

Public relations aspect

A constructive approach to this problem has been the philosophy that we render a household service to the customer rather than merely supply fuel. With this point of view, we supply a cooking service—a water heating, refrigeration, space heating, clothes drying and incinerating service—not just so many Mcf of gas.

This is a sound and healthy point of view for the industry, as it more closely identifies the gas utility with the customer's interests. Obviously, efficient, prompt and courteous appliance service is essential to insure rendering a satisfactory end-use service to the customer.

We regard such service to be a major factor in insuring good customer relations and in increasing the acceptance and use of gas appliances. *"Free" appliance adjustment service is the only truly personal service that the utility renders its customers;* as for the most part, other customer contacts are of a negative nature. Such "free" service tends to remove the stigma of an impersonal, monopolistic corporation from the utility.

Servicing as a competitive tool

A gas utility in a strongly competitive market must use all of the facilities available to it in order to extend and retain the residential gas load. A strong sales program, including adequate advertising and promotion of gas appliances both through the utility and through dealers, is essential. However, such a program will not succeed, in our opinion, no matter how well executed, if there is customer dissatisfaction with the results obtained on gas appliances due to poor or inadequate servicing. We consider "free" utility service fully as important as the much-discussed and highly-necessary sales activity that the industry is being constantly importuned to undertake.

It is a significant fact that those gas utilities which are most subject to competitive attack are the most enthusiastic supporters of "free" appliance servicing by the utility.

Servicing appliances sold by dealers

In servicing appliances, it is essential that the utility maintain a policy of complete impartiality between appliances sold by the utility and those sold by dealers.

Nothing is more detrimental to utility-dealer relations, than for the utility to give preferential servicing treatment to the appliances sold by itself.

Contrawise, the dealer is encouraged to sell gas appliances, and the customer buys them with greater confidence when dealers can say, "The gas company will service this appliance without charge."

alued as Industry *Ace in the Hole*

F. H. Trembly, Jr.

The Editor, American Gas Journal:

I have followed with a great deal of interest your several editorials on the subject of appliance servicing, and have appreciated the strong position you have taken regarding the obligation on the utility to render such service. These articles were of particular interest to us, as our Company is one of the strongest supporters of the policy of "free" utility adjustment service.

We believe so strongly in this direction that I have prepared an article . . . that generally describes our policies and the reasons behind them . . . in the hope that you would . . . publish it, possibly in your May issue, where it may promote some discussion at the Executive Conference to be held on the West Coast on May 15th and 16th.

The problem of servicing is now being studied by a special AGA committee on Customer Service Responsibility that is under the chairmanship of Mr. Howard B. Noyes of the Washington Gas Light Company. The committee has a real problem in bringing together the Industry's thinking on this controversial subject. . . .

Frank H. Trembly, Jr., Vice president in charge of sales, The Philadelphia Gas Works Company

It is becoming an increasingly accepted fact in the industry that active dealer support and promotion of gas appliances is necessary and essential to the continued growth of the residential gas load. This being the case, any utility policy that increases dealer interest in gas appliances should receive careful consideration.

Customer dissatisfaction

A customer's complaint is indicative of customer-dissatisfaction, temporary or permanent as the case may be. By far, the greatest number of customer complaints have to do with poor appliance performance. These complaints, improperly handled through unskilled service men; or left uncorrected because of the customer's reluctance to pay a service charge, create hazardous conditions, to the great detriment of the gas utility.

No amount of advertising or sales promotion can offset adverse newspaper headlines and word-of-mouth criticism resulting from the consequences of a poorly adjusted appliance.

These instances are being continually brought to the attention of both dealers and customers by competitive sales agents who choose to use the element of fear to reinforce their sales arguments. In the case of our company, "free" adjustment service has eliminated a major potential source of customer dissatisfaction, and has permitted the company to avoid hazardous situations in connection with the use of gas appliances.

Appliances require specialized service

With the increasing complexity of modern gas appliances, greater servicing is necessary, and a continuous training and re-training program is required to insure proper servicing, even by utility personnel. It is difficult, if not impossible, to obtain the same degree of competence with the service men of private agencies. A high labor turn-over, the unwillingness on the part of the owner to spend profits on training, and the precariousness of this type of business, all tend to render service by private agencies less reliable than by the utility.

The ultimate is reached when annual servicing contracts are obtained at a low price under competitive bidding, so that the servicing agency can only show a profit by providing service of the poorest quality.

In consideration of these facts and in light of the recent experience of the industry, it should be agreed that the customer is most assured of prompt, efficient and high quality service when it is rendered by the utility.

Control of appliance quality

The provision by the utility of appliance servicing without direct customer charge carries with it at least an implication of utility control of the quality of appliances installed on its lines. The utility's interests are best served by appliances requiring the least service; and it may be expected that the utility will move to accomplish this, either by local regulation or by an effort to improve appliances through the AGA approval requirements subcommittees.

In the case of The Philadelphia Gas Works Company, utility regulations that are above AGA minimum requirements on central heating equipment, over the past fifteen years have reduced the cost of servicing so that it represents no undue burden.

In the calendar year 1951, the cost of all no-charge house heater servicing work, including customer calls, lighting, turn-off and cleaning, was $4.11 per heater, which we believe to be perhaps the lowest in the industry for the type of service rendered.

Support of appliance manufacturers

Gas utilities should recognize the necessity for giving encouragement to gas appliance manufacturers and, by so doing, insure their loyalty and support to the industry. One of the most important ways to accomplish this is to provide "free" adjustment service. Most gas appliance manufacturers regard this as a highly desirable utility service.

The continued enthusiastic support of the appliance manufacturers is a major asset to our industry, and utility policies should be moulded to insure this where possible.

Our "free" servicing policy has been

(Continued on page 42)

Put Best Foot Directly Forwa

by Theron W. Locke
Public Utility Research Specialist
Goodbody & Co.

The fast-growing natural gas in soon will encompass practically gas industry. It is in the throes pansion and, like other utilities, gaged in a struggle to reaffirm its latory right to live.

Regulation and the raising o money are the two big pro Companies should explain the and regulatory problems repeate their stockholders and consume ficers should visit large stockhol build their financial relations.

Each gas company and p company should send out a qua letter to stockholders outlining has happened in (1) earnings new customers, (3) regulatio rates, (4) new competition, (5 construction program and plans financing, (6) financing and con tion completed in the current qu

THERE are probably relatively few people, other than those engaged in the actual study of utilities, who appreciate the full extent and meaning of the great expansion which has taken place in the natural gas industry since the end of World War II. And fewer still have much of an understanding of the problems created by this expansion.

The great new pipelines now spreading to practically all parts of the United States have already changed the gas industry from what, only a few years ago, was largely a manufactured gas industry with relatively poor earning power to what is rapidly becoming the natural gas industry with good earning power. The terms "gas industry" and "natural gas industry" are becoming synonymous.

The gas industry was serving approximately 25,392,000 customers in 1951, an increase of 3.7 per cent over 1950 but 27.1 per cent over the total at the end of 1945, and 61.8 per cent over 1935.

Only 35.4 per cent of those using gas were receiving natural gas in 1935. This ratio had increased to 44.5 per cent by 1945. But at the end of 1951, 67.8 per cent were using natural gas and it looks now as if this percentage would grow considerably in the next few years.

In the period from 1935 to 1950 the number of gas customers using manufactured gas had dropped from 52.7 to 31.7 per cent. Those using mixed gas declined from 12.1 to 9.2 per cent.

Natural gas saved industry's life

Prior to the great expansion of the large diameter pipelines after the war, the manufactured gas industry was considered by many investment analysts as becoming weaker and weaker—and on the way out. The industry's earnings declined sharply in the 1935-45 decade; its costs multiplied. Higher taxes, and particularly the sharp increase in fuel costs and wages after the war made many gas departments of combination gas-and-electric utilities a "poor relation." The outlook for the securities of some separate gas companies was bleak.

In some cases, rate increases were allowed and tended to relieve the distress, but regulation cannot guarantee earnings; it only acts as a ceiling on earnings. Higher rates may cause consumers to seek alternative sources.

The manufactured gas industry faced the problem of pricing itself out of business; it saw no way to avoid the higher rates necessary to offset higher costs.

However, this has been changed considerably for the better. Natural gas has been a life saver for the manufactured gas industry. Costs would be much higher today if the distributing companies had to make all their gas via coke ovens or water gas sets. This the consumer forgets, or doesn't even know, when he howls about rates and complains that he was promised a rate cut when natural gas became available. Now that it is here and he is still paying the old price, or higher.

Pipelines complicate rate situation

The problem of rates is a serious one, and the pipelines have become a complicating factor. Before the pipelines reached out to the Northeastern and Atlantic coastal areas the rate problems of distributors were largely local. The gas company, or combination electric-and-gas company, found it needed higher gas rates and went to its state commission or to the municipality and asked for higher rates. It showed its trend of costs and taxes, the cost of coal and oil, the recovery of by-products as an offset to total gas manufacturing costs, the fixed charges and preferred dividends. Its record showed that costs of operation were governed by wages, taxes and materials prices. As these tended to fluctuate, operational costs varied, from year to year. Most state commissions grasped an understanding of this phenomenon of the manufactured gas industry.

The advent of the large diameter pipelines seemed to offer a stable fuel cost for the first time in the history of the gas industry. Pipelines offered the gas distributing company a fixed amount of gas per day and per year on a long term contract at an agreed price. Distributors found, in many cases, that they could change over from their 528 or 550 Btu manufactured gas to natural gas with 1,000 to 1,020 Btu and push twice as much heat content through their mains in the same volume. And they could reduce rates somewhat, on the basis of the contractual cost of the gas they would get from the pipelines. Then they might do twice the volume of business with only a small additional investment.

So the great pipeline expansion to far distant areas grew by leaps and bounds and all seemed good—too good to be true, it developed.

Along came the Korean war, and with it the beginning of another great inflation spiral. With other costs and taxes, the price of gas in the field, already doubled in two or three years, doubled again.

Pipelines were finally forced to ask for rate relief. But their different rate situation is regulated by the Federal Power Commission. That commission uses the original cost theory: original cost of plant and property less accrued depreciation of about 3 to 3¼ per cent per year. Pipelines built in the early 30's or before World War II had very low construction costs and had low prices in their contracts to buy gas. Those built since the war had much higher costs for the construction and the gas itself.

The price at which gas is sold by pipeline companies to distributing companies has been and will continue to be different

ancial Analyst Urges Gas Industry

7) plans for the coming year—
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take a firm stand that it be
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d by institutional investors.

in different areas. But, in practically all areas, the higher taxes and expenses mean that the pipelines are earning a lower return on their original cost investment than they were; a considerable number already are asking rate relief.

Under the Federal Power Commission procedure, a pipeline can start to collect the higher rates it is requesting, generally under bond, starting six months after its application is filed, if FPC has not acted on its rate application by that time. Collection of the higher rates continues until a final FPC decision is made, sometimes a year or more after the higher collection began. To the extent that FPC does not allow the higher rates, the pipeline company must make refunds from the money it has held on that possibility, realizing it may be permitted to keep all it has collected in higher rates.

What about distributing companies?

This is a fairly good arrangement. Lag in company earnings should not exceed six months, after asking for higher rates.

But how about the pipeline customers —the gas distributing companies? They have no such automatic provision, in most cases. They have to start to pay the higher rates to the pipeline, but must still sell the gas at the old price until they can get a rate increase.

Here, the problem is complicated by the great differences in regulatory philosophy and procedure in the various states. Some states use original cost as the basis of valuation for rate making purposes; others use prudent value or fair value or straight reproduction cost. Three states have no commissions regulating the rates of electric and gas distributing companies.

Distributing companies can't recoup

How can an operating company recoup these higher rates? The answer is that most operating companies must take whatever loss develops until they can get some rate relief, and this may take from two months to a year or more.

Until the gas distributing companies get specific rate relief they lose the amount they pay in higher rates. Rate increases are not retroactive, so this loss comes right out of the common earnings.

Rate relief often is hard enough to get for a straight gas distributing company. When the distributing agent is the gas department of a combination electric-and-gas company, the question of rate relief is bound up with the earnings of the gas department vs. those of the electric department vs. overall earnings. Here, a rate case can really be complicated and time consuming.

The analyst's position and problems

What has all this to do with the financial analyst? Why have we included all the foregoing before discussing anything directly relating to the financial analysis problem in the great group of gas company securities? Before discussing the analyst's views it seems appropriate first to outline the situation he views. And the situation is extremely complicated by: (1) the great pipeline expansion, (2) the effect of pipelines on operating costs of gas distributors, (3) the rate increase problem of the pipeline companies, and (4) the effect on their customers—the gas distributing companies.

The analyst is faced by the fact that securities of gas companies have gained considerably in investment favor, and justly so, in recent years. Yet the great confusion being caused by the rate question is making the estimation of earnings and the determination of gas securities' values much more difficult.

What really is happening is that the entire utility industry is having to reestablish its right to a certain rate or level of earnings. No matter what a company has been accustomed to earning, higher taxes and other costs have made it necessary for many utilities to seek rate relief, and many others seem likely to have to do so in the next year or two. While a number of gas companies had to obtain rate relief after the war, many electric companies have not had a rate increase in 30 years, and have steadily reduced their rates. Today, average rates for residential electric customers are the lowest in history and average annual use at a new high for all time.

The analyst's problem is made even more difficult by the utility industry's construction program—the largest in its history. The gas distributing companies have had the advantage of being able to obtain much larger supplies of natural gas, and many distributing companies were able to change to straight natural gas and carry twice the heat content in their mains with the same volume, with relatively small added investment.

The electric and telephone companies and pipelines have had to add tremendous amounts of new plant to meet the increased demand for service. This has necessitated raising large amounts of new capital. The burden of earning a good rate on the old plant and trying to maintain this rate on new plant with debt, preferred and common shares all increased sharply, has been a difficult one. Add to this the sharp increase in operating costs and taxes, and it can readily be seen that the earnings problem has become serious.

The tax collector has taken a good part of the savings the manufactured gas distributing companies envisioned when they considered the advisability of taking natural gas and signed the long term contracts. That operating costs and rates would be higher today without the benefit of the natural gas is a fact that most politicians overlook and consumers do not understand.

It seems strange that the gas industry does not publicize this fact! The analyst wonders if the industry is putting its best foot forward?

Some gas companies act as if they were constantly on the defensive. Such

(Continued on page 35)

Industrial Application

Speed and Quality of News Press

SPEED AND NEWS are tied together so closely that the words themselves are regarded somewhat synonymously. The highly dramatized news deadlines are hard, unremitting working factors in the lives of men and women who gather, write, edit, print and distribute news to their ultimate consumers, the readers, listeners and viewers.

News handling has undergone vast technological changes, during the past twenty, ten and even five years. Some of those changes involve entirely new media—radio and television; others are improvements in established technologies—high speed lithographic and gravure presses.

The effect of these changes on letterpress printing has been most emphatic. Simply stated, letterpress printing for high speed news-magazine printing was faced with the basic and combined consideration of economic-technological survival in this field.

Letterpress printing is done by type or plates with high and low surfaces. The high surfaces carry the ink that is transferred directly to the paper. Lithography and gravure, utilizing different printing processes, have certain advantages that offer a challenge to other press printing.

In letterpress work, the press itself was not the determining factor in increasing production. The press builders could make machines that would run faster, but the ink would not dry fast enough to avoid smudging.

A fast drying ink would seem to solve this problem, but it proved to be more complicated than just developing a new ink. If the ink would dry fast enough for greatly increased press speed, it could not be kept in a plastic state until it was printed on the paper—if it remained plastic it would not dry on the paper. The problem was complicated substantially by the need for *both* plasticity and fast drying.

High temperature gas drying equipment, developed specificially for letterpress printing, resolved these problems.

Now, in line with the rapid improvement of all its equipment to keep letterpress printing in a strong competitive position—technically and economically—Pacific Press is utilizing the principle of heat processing in the production of high quality-high speed printing.

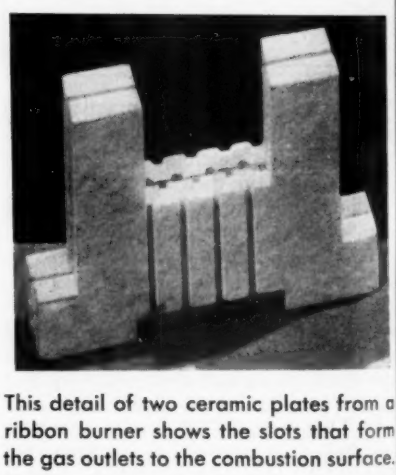
Few readers of news-magazines think of them as the product of modern five-acre plants. That is the size of Pacific Press in Vernon near Los Angeles, the largest in the West, that produces such widely recognized weekly press-products as *Time* and *Life*.

Two requirements come before all others in weekly magazine printing: speed and quality. The rapid transformation of a tremendous mass of words and illustrations and advertisements into many hundreds of thousands of copies of colorful magazines each week is a responsibility that is so great that the printer is obliged to make far-reaching provisions to meet the speed-and-quality requirements. Certainly, it is an understatement to say that one of the provisions made in such a printing plant is the selection of dependable production equipment. Failure to meet schedules would be disastrous!

When Pacific Press moved to the new Vernon plant, in 1947, two Hoe high speed perfecting presses, each large enough for 64 pages of *Life* at one time, and one press for *Time* were installed.

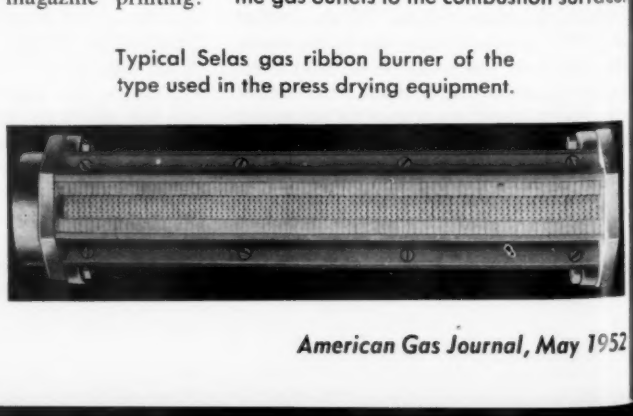
Each magazine press has four printing units; two located on an upper level and two on a lower level. Each level prints on both sides of the paper web, which is the continuous strip of paper fed through the press. The *Life* presses mentioned above take webs, or strips, that are 62″ wide and the *Time* press

Selas gas dryer, immediately following first printing unit, opened to show the three ribbon burners with tape indicating proximity of paper web to the burners in high speed operation.



This detail of two ceramic plates from a ribbon burner shows the slots that form the gas outlets to the combustion surface.

Typical Selas gas ribbon burner of the type used in the press drying equipment.



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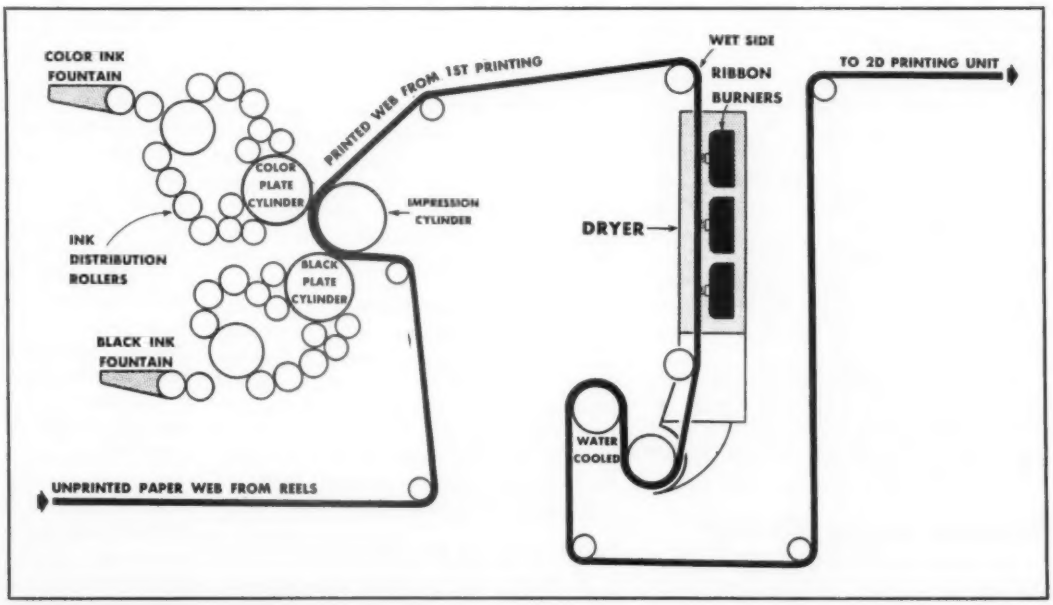
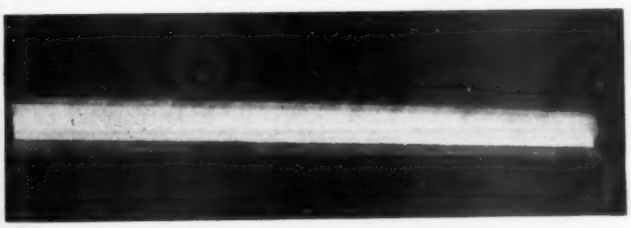
Gas Co.



Simplified diagram of the coordinated printing and flash-drying equipment that produces *Time* and *Life* magazines, weekly, at Pacific Press, Inc.



A gas-fired ribbon burner showing character of combustion taking place within press drying equipment.

akes a web that is 50½" wide. The rinting units on each level print the upper side of the web first and then print he lower side of the web as it continues its travel. As the webs come off the delivery end of the press they are combined for cut-off and folding.

These high quality printing presses perate with paper speeds that are well n excess of 800 feet per minute. Such peeds became possible only through the coordinated development of heat setting nks that are stable at ordinary pressroom temperatures and gas fired dryers hat are sufficiently compact and flexible o permit mounting and operating as integral parts of the presses immediately following each of the printing units.

The inks are dried instantaneously on the fast moving web of paper by the gas fired driers, designed and built by Selas Corporation of America.

There are three ceramic gas ribbon burners in each drier, spaced about one foot apart and extending across the paper web. Since the presses are designed to accommodate various web widths, the operating lengths of the burners may be adjusted to conform to these varying web widths by the use of a metal flame-stop, fitted into a track directly behind the ribbon burners.

The forced drying is accomplished by passing the printed side of the paper in front of the burners.

The heat input to the printing on the paper is controlled to drive the solvents out of the ink, instantaneously, leaving *only* the ink solids—flash dried printing. This eliminates even microscopic slurring of the ink impressions.

The speed of the moving web—more than 800 feet per minute—does not permit an exposure to heat that is long enough to injure the web in any way. The web subsequently passes over water cooled rollers to reduce the temperatures of the paper.

Each dryer is equipped with fully automatic controls connected with the press drive. The speed of the press automatically controls the amount of heat on the web by controlling the manifold pressure in the ribbon burners. Therefore, the degree of flame impingement upon the printed web varies directly with the speed of press operation.

A shut down of the press—even a "red button" emergency stop—automatically cuts off the gas supply to the drier, without any other action by the pressman, and prevents damage to the web.

High speed-high quality letterpress printing, as it is produced today at Pacific Press, is the result of long and painstaking research and the cooperative developmental efforts of the manufacturers of the presses, the gas equipment and the special inks.

Just in Time for Election

by John F. Falvey

Financial Editor

NUMEROUS cross-currents have developed in the stock market during the past several weeks, with the most important pressures being exerted by the lower earnings reported for many corporations, consequently less favorable dividend actions by the respective managements and the abject uncertainty that has been inserted in the economic situation by the Federal government's stupid blunder in mishandling the steel wage case.

As a result, common stock prices in the space of little more than a single week surrendered all the gains they had built up laboriously during a two-months' span.

Only about sixteen per cent of companies which have reported earnings for the March quarter were able to show gains above the results for the similar period a year ago.

Dividend increases in 1952 are off

It is significant that dividend increases during the initial 1952 quarter were made by only 130 companies, which fell far short of the 231 dividend increases effected in the first three months of 1951.

Dividends were either reduced or omitted in 61 instances in the first quarter of this year, against only sixteen in last year's corresponding quarter.

Whistling while walking in grave yard?

Financial people incline to the belief that corporate earnings for 1952 will equal or closely approximate the recent year average, and that dividend payments for the year will compare favorably with 1951, despite somewhat smaller payments by a number of companies.

This may be just another case of the small boy whistling while walking through the graveyard, but the fact remains that a powerful stimulus would be imparted to the national income—and especially to the segment of it known as "disposable income"—if the Federal government should have its way in the steel wage dispute.

Just in time for the Election!

A new round of wage increases for all industry, based on the pattern adopted in the steel case by the so-called Wage Stabilization Board, would add at least another $10 billion to national income within the next six month

As if this step alone would not enough, there is every indication th the Federal Reserve Board is preparin to announce very shortly its abandon ment of Regulation W, freeing the r straints on installment sales. Couple with the unfreezing of wages, which th Government now is trying to pu through, this would spell another infl tionary shot in the arm for the nation level of purchasing power—*just in tim for next November's polls!*

If the Administration has its way, th quietus placed on inflationary forces w have been short indeed, the price lev having remained practically consta only for the past six months, followin a constant and sharp upswing whic had set in with the outbreak of the K rean War.

Market waiting for clarification

The stock market has not complete halted its drop in prices to reflect th possibilities inherent in these threats economic stability. It probably is wai ing for clearer delineation of the po sibilities in each respect. If any criteri is needed, however, it is easily afford

Index of Yields : Selected Utilities Stocks

	Apr. 1952	Mar. 1952	Feb. 1952	Jan. 1952	Dec. 1951	Nov. 1951	Oct. 1951	Sept. 1951	Aug. 1951	July 1951	June 1951	May 1951
Natural Gas Transimission Companies	4.08%	4.03%	4.36%	4.32%	4.50%	4.51%	4.67%	4.67%	4.65%	5.07%	5.26%	5.35
Natural Gas Transmission & Distribution Companies	5.34	5.14	5.29	5.17	5.33	5.30	5.36	5.09	5.11	5.24	5.30	5.45
Manufactured & Mixed Gas Companies	5.13	4.99	5.18	5.05	5.25	5.36	5.32	5.43	5.46	5.52	5.22	5.35
Class "A" Electric Companies	5.65	5.51	5.61	5.53	5.80	5.78	5.83	5.74	5.69	5.97	5.95	5.88
Class "B" Electric Companies	5.61	5.48	5.70	5.64	5.76	5.82	5.78	5.74	5.78	5.86	5.88	5.94

Method of Compiling Index of Yields

This is a straight arithmetical index of comparative yields obtainable on a selected group of gas and electric utility industry common stocks.

The companies comprising this index have been selected by the AMERICAN GAS JOURNAL as providing a representative cross-section of each industry, from the standpoint of geographical diversification and of the relative importance of the individual companies in their areas.

No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because the yields afforded on the issues reflect such changes. The index is designed to show the rate of return and not necessarily market movements on the stocks comprising it.

The companies used in compiling this index are:

Natural Gas Transmission Companies: El Paso Natural Gas Co.; Northern Natural Gas Co.; Panhandle Eastern Pipe Line Co.; Southern Natural Gas Co.; Tennessee Gas Transmission Co.

Natural Gas Transmission and Distribution Companies: Columbia Gas System, Inc.; Consolidated Natural Gas Co.; Lone Star Gas Co.; Oklahoma Natural Gas Co.; Pacific Lighting Corp.

Manufactured and Mixed Gas Companies: Bridgeport Gas Light Co.; Brooklyn Union Gas Co.; United Gas Improvement Co.; Peoples Gas Light & Coke Co.

Class "A" Electric Companies: Boston Edison Co.; Commonwealth Edison Co.; Houston Lighting & Power Co.; Southern California Edison Co., Ltd.

Class "B" Electric Companies: Dayton Power & Light Co.; Hartford Electric Light Co.; Pennsylvania Power & Light Co.; Public Service Co. of Colorado; San Diego Gas & Electric Co.

Extra Shot of Inflation

In the upsurge in stock prices in the late 1920's which followed similar cheapening of money by the Federal Reserve Board in 1927.

Stocks may give a better account of themselves over the months ahead than they have during the recent past. But while some wage hike is in prospect for steel labor, no matter how the present industry management-Government squabble ends, the spreading of defense spending and uncertainty in some corporate lines of activity may serve to preclude development of an insatiable demand for stocks.

30% of new money from common stock

Despite recent shakiness in the stock market, equities have continued to account for a large proportion of new financing. A study of the new finanacing done in the first four months of 1952 showed that 30 per cent of the $1.8 billion of financing in that period represented common stock. Taken by itself, this ratio bulks large in relation to the average common stock financing done in the intervening years since the close of World War II. But the $526-million of common stock financing in the four months through April 30, 1952, constituted only new financing. To this must be added a substantial amount of sales effected on a secondary distribution basis to obtain the total volume of all common stock sales for the period. This would far exceed the $526 million of new financing.

The preference for equity financing in recent months came on the heels of a banner stock financing year in 1951. Offerings of preferred and common shares last year were at the highest level since 1929, amounting to more than $1.6 billion. This exceeded, by 34 per cent, the stock financing completed in 1950. The major portion of new stock sales were common shares, these exceeding 1950 by 46 per cent, with the total of all stock sales being 20 per cent above 1950. Industrial stock sales were 70 per cent ahead—and utilities only slightly above the year earlier level.

A note of pessimism

Some market observers have adopted a pessimistic attitude towards this large-scale common stock volume, on the premise that continuance of the trend would sharply augment the supply of stock in hands of the public and would make the market more vulnerable to liquidation pressures.

They point to the large utility common and preferred stock offerings of 1945 and 1946 as being both precursors of and the predominant factor leading to the liquidation pressures of late 1946 and 1947.

The writer cannot concur in this line of reasoning to cover the present market situation for, what he considers, two very good reasons.

With most utility companies initially financing plant additions through temporary bank loans, and then financing permanently only when the new facilities are about ready for operation or have already gone into operation, dilution of stockholder interest is practically non-existent since the new money goes right to work, with no stop-gap.

Institutions buying common stocks

Equally important, the bulk of new stock coming to market is not going into individual investors' hands, for the most part, from which it might come back into the market quickly. Rather, the shares have been bought in large volume by institutional investors and salted away for their high-yield return and very small measure of speculative risk.

Utility stock sales should continue high over the months ahead since financing needs are great and they promise to remain so for an indeterminate further period of time.

Several factors could lead to greater industrial stock sales if the market remains favorable. Retained corporate earnings have been receding from their 1950 peak. The result is that a large number of companies have had to depend on sale of new securities for a greater portion of their needed funds. This is due partly to debt now being as large as a good many managements would like to have it, while in many instances it also is due to management-aversion to debt, of any type, being outstanding.

Large existing market for stocks

There is no doubt of a market existing for sale of an untold volume of corporate stocks.

Even though savings banks should not take advantage of the new law in New York State, permitting them to invest a portion of their funds in preferred and common stocks (AMERICAN GAS JOURNAL, April 1952), the mere fact that these institutions possess this power might have an indirect yet beneficial effect on stock prices—heretofore lacking.

But aside from this, the individuals of the country now have accumulated a sizeable fund of savings. The proportion of these savings held in savings accounts are yielding only from 1½ per cent to 2½ per cent annually. There is not a shade of doubt that corporate common stocks, particularly those of the well-situated utility companies, are far better as savings media, with a yield of 5½ per cent and better being as nearly risk free as possible *for strictly long range holding.*

Individual investors need information

The money of these individual investors will not merely find its own way into the utilities' hands, however. It must be sought after, through a carefully planned program which has as its sole purpose the enlightenment of the company's own stockholders and of investors generally. The market for corporate funds is highly competitive, and management must put company wares on the table for all to see, if it is to attract its share of the available investment money.

It can do this *only* by means of a public relations program designed to provide investors and their investment advisers with a continuing and always up-to-date flow of information regarding the company's operations, earnings, dividend policies and outlook, both for it and for the industry as a whole.

It is a sad commentary that not one-half of the electric utility company managements are doing a good job in this respect.

What is worse—infinitely worse—is that the gas companies are, generally, doing an even poorer job along this line. Not one gas company in ten makes available anywhere near the type and volume of information which investors need and to which they actually are entitled.

The common stock money is available—all that utility companies need do is ferret it out.

Southern Counties GasCo Designs Service and Leakage Repair Trucks

INCREASED EFFICIENCY in service operations at lower cost has been accomplished by Southern Counties Gas Company, Los Angeles, with the placing in service last month of six new, completely redesigned, service and leakage repair trucks at several of the company's operating bases. The trucks were designed under the direction of William M. Minyard, superintendent of transportation.

Given a trial run in the company's Harbor division, the new two-ton GMC trucks have now been put into service in the company's Orange county, San Gabriel Valley, and Northern divisions. Mr. Minyard states that other trucks will be put into operation as needs arise.

Cost of the new model is approximately $2,500 less than the old one, with the principal saving lying in the $1,700 differential in the cost of the bodies. The less expensive body of the new model makes it practicable to retire the entire unit when the truck wears out rather than having to transfer the old body to a new chassis as was the former practice.

Not only are the new trucks smaller, less expensive, and more adaptable to a variety of uses, but they also provide easier access to parts bins, oxygen and acetylene bottles, and other equipment carried. Bins and storage compartments are placed low, and open to the outside, making them easily accessible from the street. This feature eliminates the need for personnel to climb back into the truck for tools and service parts.

Flexibility of the new equipment is enhanced by the separate, two-wheel, tow-type compressor unit, making it possible to move the truck from place to place on the job, leaving the compressor unit where it is most needed. This is a feature which has obvious advantages on subdivision installations. On the old model the compressor was mounted on the body, directly behind the cab, as an integral part of the truck.

Each of the new trucks is equipped with a socket well for a one-ton hydraulic hoist with the crane being used for setting large meters and handling other heavy equipment.—A. R.

Former model service trucks were larger and cost approximately $2500 more than the new model. Compressor unit was mounted directly behind the cab, and bins and storage compartments were located inside the truck body.

New service trucks are equipped with a socket well for a one-ton hydraulic hoist. Crane is used for setting large meters and handling other heavy equipment.

New model service trucks now being put into operation on the Southern Counties system are smaller, less expensive, and adaptable to a greater variety of uses than the previous model. They are operated in conjunction with separate tow compressor units.

American Gas Fundamentals OUTLINE

Natural Gas
- *Geology
- *Drilling and Completion

Manufactured Gases
- *Coke oven gas; producer gas, blue gas; carbureted water gas
- *Reformed gas
- *Hi-Btu oil gas

Liquefied Petroleum Gases
- Sources, properties and uses

Basic Gas Laws
- *Perfect Gases
- Supercompressibility

Transmission
- *Pipe lines
- *Corrosion and pipe protection
- Compressor stations
- Hydrates and dehydration
- *Gas conditioning
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- Orifice meter measurement

Gas Storage
- *Methods of storing gas

Gas Distribution
- *System design and operation
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- *Pressure Regulation, Part 2
- *Leak detection and control
- *Metering
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Gas Utilization
- Combustion characteristics
- Domestic
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- Interchangeability

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Management Problems and Policies
- *Corporate structure
- Public utility regulation
- Public relations

*** Indicates chapters that have been printed since January 1, 1951; available without charge to new subscribers to American Gas Journal.**

How to Use the Material

American Gas Fundamentals *is a comprehensive compilation of basic gas facts to guide any gas utility employee toward a broader understanding of the industry as a whole. It is written in layman's language so that the technical fundamentals of every subject treated may be digested and understood by the non-technical reader.*

The series is designed to be removed from each current issue of AMERICAN GAS JOURNAL *and filed in a ring binder where it may be accumulated into a text book of permanent usefulness. Material should be filed under the major subject head appearing in the upper right hand box at the head of each chapter.*

LP Gas and Its Use in Utility Service

LIQUEFIED PETROLEUM GAS, commonly known as LP gas to the industry is a fuel that has become of increasing importance to gas utilities in recent years. Those who may not be familiar with it as a gas utility fuel, will recognize it as the bottled gas and tank gas, that is so often seen in rural areas, beyond the reach of the gas mains. Practically all of the rapid growth of LP gas usage throughout the country must be credited not to the gas utility companies, but to the independent LP gas dealers and distributors who set up in business to furnish this fuel to customers in rural areas.

In recent years, however, LP gas has come to be of increasing importance to utility gas companies. It is now extensively used as a standby fuel to supplement normal gas supplies, either from gas plants or pipelines, on peak days, or during peak hours and in times of emergency. As a base load fuel it has supplanted manufactured gas in many smaller communities.

The Hydrocarbons

LP gas is a term applied to certain hydrocarbons found in crude oil, natural gas and refinery gas (Fig. 1). In crude oil it is a member of the paraffine series of hydrocarbons, so called because the higher and heavier members of the series are pure paraffin, the paraffin of commerce as we know it. It is called a series because all of the members have certain properties in common. The LP gases may be propane, isobutane and normal butane (referred to as just butane) as found in crude oil or natural gas. They are propylene, propane, isobutane, butylene and butane as found in refinery gas.

For the purpose of this chapter on LP gas, however, LP gas will be understood to refer to the commercial grades of propane and normal butane, and properties given in the table are average properties for the gases. To avoid confusion the reader should realize that these commercial grades do not have properties identical in every instance with the theoretical properties of absolutely pure gases. For example, pure propane has a boiling point of —44° Farenheit, while the commercial grades now supplied average —51° F as shown on the table. Similarly butane in its pure state boils at 32° F, or just about the freezing point of water, whereas that in general use has a boiling point of 15° F. The theoretical properties of the pure gases have little significance in considering questions of handling, application and use, since it is only the commercial grades that are available for general use throughout industry.

The important distinguishing characteristic of LP gas is that it is a liquid at comparatively low pressures and at ordinary temperatures; but when released from confinement in a tank or cylinder, it becomes a gas at atmospheric pressure. Consequently it has the advantage of being almost as easily handled as gasoline, yet when it is piped to a gas burning appliance it burns for all practical purposes the same as either manufactured or natural gas.

Sources of LP Gases

LP gases are produced from three principle sources. (Fig. 2) These sources are natural gasoline plants, cycling condensate plants and refineries. At one time this production was almost entirely from the two natural sources, although in recent years the refinery output has become of increasing importance.

The original, and still the principle source of supply for LP gas is from the crude oil-natural gas mixtures that emerge from the ground through producing oil wells, or from natural gas wells. Gas from oil wells is richer in the higher constituents; i.e. propane butane and natural gasoline than is gas well gas. The latter is called "dry gas," because it is usually low in these extractable constitutents, while oil well gas, or "wet gas," is high in these members.

The pressure on a well, more than any single factor, fixes the amount of extractable constituents in natural gas. The pressure may be so high that they are almost wholly kept in a liquid condition in the gas stratum. Then as the gas is withdrawn from the well the pressure on it automatically declines and the liquefied members in the earth vaporize and pass into the gas, thence out of the well mixed with

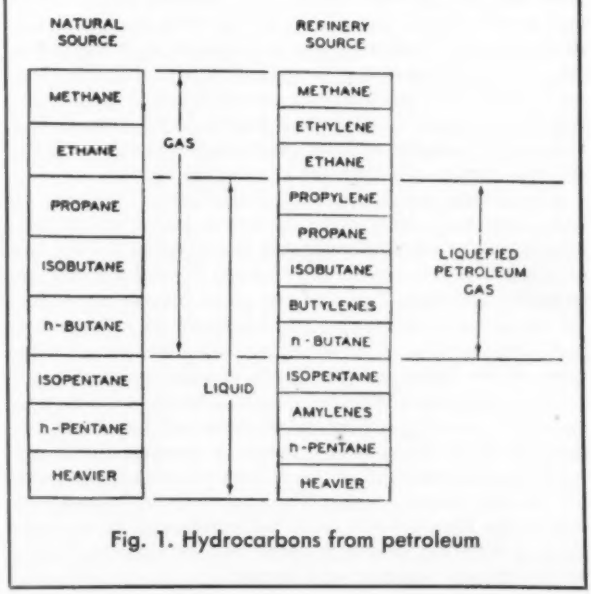


Fig. 1. Hydrocarbons from petroleum

the gas. Some natural gas does not contain any of the higher members of the paraffine series, consisting only of methane.

NATURAL GASOLINE PLANTS	CYCLING—CONDENSATE—PLANTS	REFINERIES
		PROPYLENE
PROPANE	PROPANE	PROPANE
ISOBUTANE	ISOBUTANE	ISOBUTANE
n BUTANE	n BUTANE	n BUTANE
		BUTYLENES

Fig. 2. Sources of LP Gases

Figure 3 shows the principle of operation of a plant to extract natural gasoline, propane and butane from natural gas or refinery gas. These constituents are taken out together. The plant consists mainly of a series of columns, that may be from two to eight feet in diameter, and from 20 to 60 feet high; or higher.

Method of Extraction

The natural gas (or refinery gas) from which the constituents are to be extracted, enters at the base of the absorber A, passes up through same, and out the top, as shown. In passing up through the absorber it meets a descending stream of oil; an oil of the character of light furnace oil. This oil absorbs the natural gasoline, and the propane and butane out of the gas, and leaves the base of the absorber, charged with these constituents, and passes to a still, B. This still is heated at its base with a hot steam pipe, which evaporates the natural gasoline and propane and butane out of the oil. They pass overhead, are condensed in the condenser, and accumulate in the receiver. The oil passes out of the bottom of the still, is cooled in a cooler, and then goes back to the absorber to get another charge of natural gasoline and propane and butane. This action is continuous—the oil merely acts as a carrier of the desired constituents from the absorber to the still.

The natural gasoline, propane and butane, pass over to the Column C. Here some dissolved gas, methane, and ethane, which were unavoidably dissolved in the oil, are expelled from the top of the Column C, and join the gas from the absorber. This gas goes on its way to a pipe line for use in cities and towns, and wherever else it is used. It is depleted a little, in heating value, say a few per cent, because of the hydrocarbons that have been removed.

The material in the receiver at the bottom of Column C, is now all natural gasoline and propane and butane, and in the Column D the natural gasoline is separated from the mixture and passes out at the bottom of same to the natural gasoline storage tanks. The propane and butane pass out of the top of Column D are condensed in the condenser, collected in the receiver and in Column E, are separated into propane and butane.

Some of our liquefied petroleum gas is refinery gas; i.e., is obtained from petroleum refineries. This gas is a by-product of operations conducted by the refinery to make gasoline, by so-called cracking methods. In these processes certain heavy fractions of crude oil, gas oil, and fuel oil, are subjected to high temperatures and pressures. Under these conditions the oil is chemically changed and gasoline is produced, plus certain gaseous hydrocarbons which are by-products of the cracking operation.

The extractable constituents in refinery gas, say the propane and propylene, and the butane and butylene, are removed from refinery gas by the same process as described above for taking the butane and propane out of natural gas.

Although methane and the pentanes are also part of the fractions of natural gasoline they are present only in minute, or very small quantities in LP gas. Pure methane, since it is never a liquid at ordinary temperatures (boiling as it does at —258° F) is objectionable in LP gas because it increases the vapor pressure.

Vapor Pressure

All liquids have a characteristic called vapor pressure, which is defined as the pressure existing above the liquid in a closed container with no other gases or vapors present. The vapor pressure of any liquid increases with increases in temperature, consequently it is always measured and stated in terms of a given temperature. In the table the vapor pressures of propane and butane are shown for various temperatures from 70° to 130° F.

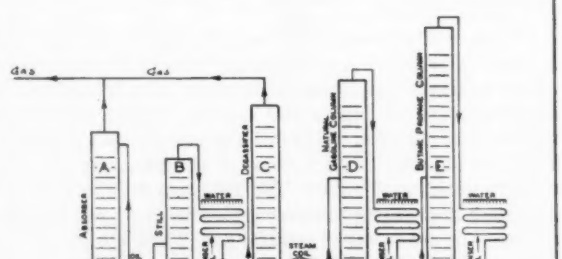


Fig. 3. Plant for extracting natural gasoline, propane and butane from natural gas.

The various characteristics of LP gases have to a large extent been the determining factors in how and for what they will be used. Since all of them have the advantage of being liquid at ordinary temperatures, and under some degree of pressure, they are handled in much the same manner. The chief difference in handling is that butane, with a higher boiling point and consequently a lower vapor pressure does not require as heavy a container as does propane, in pounds of steel per pound of gas stored or transported.

Average Properties of Commercial LP Gases

	PROPANE	BUTANE
Formula	C_3H_8	C_4H_{10}
Vapor pressure, psig		
at 70° F	124	31
at 100° F	192	59
at 105° F	206	65
at 130° F	286	97
Spec. grav. of liquid (water = 1)	0.509	0.582
Initial boiling point at 14.7 psia, ° F	—51	15
Lb. per gal., liquid at 60° F	4.24	4.84
Cf. of gas, per gal., liquid at 60° F, 30" Hg	36.28	31.46
Spec. grav. of gas at 60° F, 30" Hg (air = 1)	1.52	2.01
Limits of inflammability % gas to air		
Lower limit	2.4	1.9
Upper limit	9.6	8.6
Required for complete combustion:		
Cf. air/cf. gas	23.4	30.0
Lb. air/lb. gas	15.58	15.3
Latent heat of vaporization at boiling point:		
Btu per lb.	185	167
Btu per gal.	785	808
Total heating values (after vaporization)		
Btu per cf.	2522	3261
Btu per lb.	21560	21180
Btu per gal.	91500	102600

But since commercial butane requires a temperature of 15° F to vaporize it, whereas propane boils at 51 degrees below zero, propane can be used without the introduction of artificial heat to vaporize it in climates where, in cold enough weather, butane would remain liquid even at atmospheric temperatures.

The field of utilization of LP gases as far as the gas utilities are concerned falls into several classifications. The simplest of these is direct service in which the diluted or undiluted vapors are employed. Under this heading falls individual domestic distribution of either butane, propane or mixtures of the two is sold in bottles or tanks, to be placed on consumers premises and piped to the appliances in which the gas is used. Propane, or mixtures containing a high percentage of propane are generally sold for this purpose in the northern part of the United States, since the gas must be self vaporizing at atmospheric temperatures, in winter as well as in the summer.

A second use for LP gas in direct service is through a system of central plant distribution of either undiluted or diluted vapor through pipelines. This is the type of service that characterizes the so called town gas butane-air or propane-air plants which have been used in many communities to replace manufactured gas. In plants of this type the vapors are generally taken directly from a storage tank through a vaporizer, into the distribution system. In some systems the undiluted vapor is piped through the gas distribution lines to the point of consumption, but more frequently it is mixed with air at or near the point of its withdrawal from the storage tank.

The Vaporizer

The vaporizer is a heat exchanger which furnishes the necessary heat to the LP gas or mixtures in storage, to insure complete vaporization at any forseeable outside temperature, and at the maximum anticipated rate of withdrawal. The vaporizer may use steam, hot water, or the heat from a gas flame as the heating medium.

The reason a vaporizer is generally provided, even though propane boils at —51° F is that the latent heat of vaporization as shown on Table I is 785 Btu per gallon of liquid at its boiling point. Thus for every gallon that is vaporized, this much heat must be supplied from some source. Where the container is small, as in the case of a propane cylinder, this amount of heat can normally be obtained from atmospheric heat transfer. But as any LP gas is withdrawn from a tank the quantity in the tank reduces and the square feet of exposed heat transfer surface is reduced accordingly. A point can be reached, therefore, where the withdrawal rate is greater than the heat transfer rate and the temperature of the liquid will start reducing. Since the expansion of gas also has a refrigeration effect, this tends further to reduce the temperature of the remaining liquid. Eventually under these conditions the tank temperature will reduce below the point at which the gas will vaporize unless some artificial means is provided to introduce heat more rapidly than it can be absorbed from the atmosphere.

Undiluted Distribution

Reference has been made to systems serving diluted and undiluted vapors. In gas utility practice the undiluted process is basically one of introducing the gas from a storage tank into the distribution system through a vaporizer, and of regulating the dry gas thus vaporized to the required distribution pressure. The advantages of this system are simplicity in design and construction with the resulting economy; lower labor costs since such a plant requires very little supervision and the ability to carry more Btu through any given size of pipe. The disadvantages are the dependence on the source of liquid to maintain a constant Btu content; high unaccounted for gas losses in systems that are not tight and the fact that under severe winter conditions the undiluted gas may reliquefy in cold stretches of the distribution system piping.

The diluted or air-mix gas plant is the type now most commonly used by gas utilities. Here the gas is vaporized, and after vaporization it is mixed with a precisely controlled quantity of air and this mixture is distributed to the consumers. It is necessary to control very closely the air-gas ration for several reasons. Principle among these are: to insure uniform and satisfactory performance of the gas at the burners, and to comply with the requirements of public service commissions. These regulatory bodies most frequently prescribe narrow ranges in specific gravity, chemical constituents and heat content within which all gas sent out must fall.

A distribution system that is a combination operation embracing both LP piped gas distribution and the sale of the same gas in cylinders for customers beyond the gas mains is maintained by a few companies. Any cylinder or bottled gas operation requires constant access to a bulk storage station. Here the butane or propane is unloaded from tank cars and stored in large pressure tanks prior to being transferred to small cylinders for delivery to domestic customers. It is therefore possible to use the same storage tank as a source of supply for LP gas vapor, which may be drawn from the top of the tank and sent out through the gas mains in either diluted or undiluted vapor form.

Where gas companies follow this system of distribution they are able to supply bottled gas service to customers in thinly populated areas, or in new subdivisions that are slowly being built up, beyond the limits of the existing distribution system. As the density of population becomes greater, with the houses close enough together to warrant the construction of new gas mains, a distribution system can be extended into new areas, and piped gas used to replace the original bottled gas service.

Another example of the use of LP gas in direct service is in the thousands of industrial plants throughout the country that now employ it. Sometimes it is used as the only fuel, while in other instances it is stored and held as standby for use when gas deliveries from the utility are inadequate to meet plant requirements. There is practically no commercial or industrial use of either manufactured or natural gas that cannot be served with LP gas. The deciding factor is usually the cost involved.

On the average LP gas may cost about as much as manufactured gas in terms of Btu, or therms, of heat delivered; and it will almost always cost considerably more than natural gas. This of course is a generalization that cannot be applied specifically to every part of the country, as the availability of supply, the distance the LP gas has to be transported and the comparative costs of other fuels, such as coal or oil for gas making, all enter into the economic calculations involved.

Enrichment

Another important gas utility company use for LP gas is in the enrichment of low Btu manufactured gas, such as blue gas or water gas. As was explained in the chapter on Manufactured Gas (American Gas Fundamentals, Feb. 1951) this gas has a low heating value, usually less than 300 Btu per cu. ft. and before it is distributed as city gas it is enriched with oil gas or other gases. To raise low Btu gas to the more or less minimum requirements for utility service of 550 Btu requires the addition of a richer gas of some kind. In making a carburetted water gas, gas oil is introduced into the carburetor in the blue or water gas making process, where it is cracked by heat to form an oil gas which mixes with the blue gas. This raises the heat content of the resulting mixtures of gases, to a predetermined standard. Butane has been used as a carburent for blue gas with satisfactory operating results, and its use as a substitute for oil gas is again largely a question of economics.

Cold mixtures of either butaine-air or propane-air may also be added to manufactured gas to increase its thermal content, by what is called cold enrichment. However, since the addition of uncracked LP gas to manufactured gas raises the specific gravity of the resulting mixture, it may lead to utilization difficulties where consumers' appliances are adjusted for manufactured gas only.

Recarburetion of manufactured gas, to offset the thermal loss that occurs in the course of its compression and transmission, is another minor use for LP gas. Coal gas and carbureted water gas contain small amounts of benzol, toluol and other light oil vapors. Where these are not extracted at the plant they pass out into the gas mains in vapor form. A portion of these vapors condense out of the gas under certain conditions of temperature and pressure. The amount of vapor that condenses increases with the pressure to which the gas is compressed and also as the gas is cooled during transmission. These light oils have a heating value of 122,500 Btu per gallon, which of course is lost to the gas when they condense out as liquids. Propane is sometimes introduced at or near the end of a gas line to compensate for this loss.

LP Gas as Standby

To the gas industry, LP gases have demonstrated their greatest versatility and come into their most widespread use as a standby fuel to meet winter or daily peak load requirements.

In recent years the greatly expanded use of natural gas, and the accompanying growth of the house heating load has introduced an element of uncertainty in the winter needs of gas supplies due to cold weather. Gas companies now have a greater winter domestic load than ever before in the history of the industry, and system load factors have declined as a result.

Since many distributing utilities buy their natural gas supplies from pipelines on a demand and commodity charge basis, the nature of the rate structure is such that an increase in demand for any maximum day results in an increase in cost per M cu. ft. for all gas purchased during the year.

Propane-air is interchangeable with natural gas within wide limits, and as a result it has become the most popular of all natural gas substitutes. Propane air plants can be constructed for almost any desired maximum sendout capacity, from less than half a million to over fifty million cubic feet a day. A propane air plant can be placed close to the point of demand and, unlike other peak shaving plants, it can be started up and shut down quickly making it ideal for use on peak hours during the winter days. Plants can be electrically operated by remote push button control if desired. The ratio of effective output volume to storage volume as compared to natural gas is 700 to one. In other words for every cubic foot of liquid in storage this output will replace 700 cubic feet of 1100 Btu natural gas at 75 pounds pressure.

Much research and development is also being done on the use of LP gas in the various catalytic reforming processes. In the chapter on Reformed Gases (American Gas Fundamentals, April, 1951) describing the processes for reforming natural gas, it was shown that propane, butane or other hydrocarbons may be substituted for natural gas in catalytic reforming with satisfactory results.

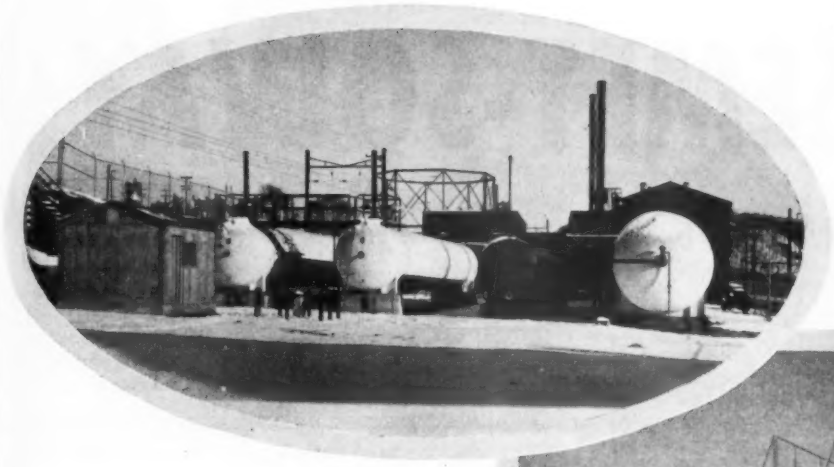
LP gas, once a troublesome component of natural gasoline that was disposed of by merely allowing it to "weather" to the open air is now a valuable product around which an entire industry allied to, but not part of, the gas utility industry has been built.

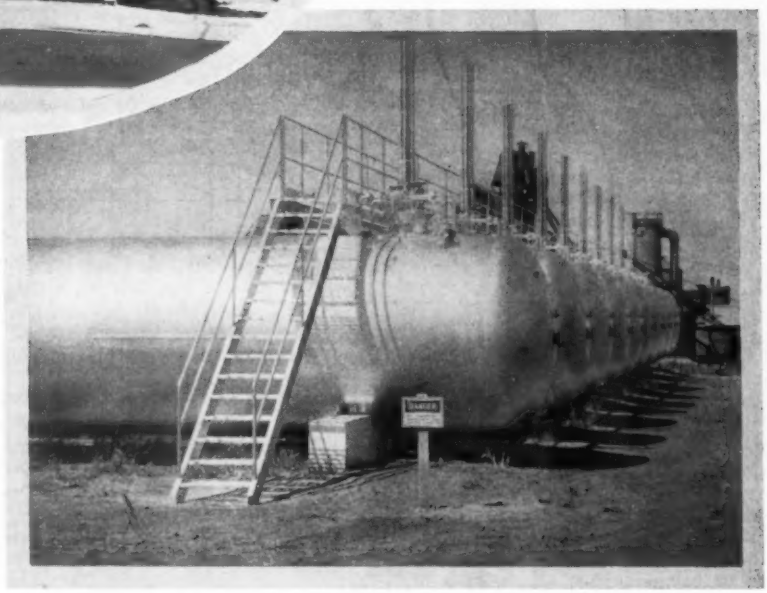
This chapter on LP gases was prepared by George A. Burrell,
President, The Atlantic States Gas Company, Inc.

PROPANE Fits Into Any Picture

For:

Peak Shaving
Standby
Base load





PGC plants are engineered—designed—built to meet your specific needs—whether your sendout be large or small. Shown here are two typical installations; one with 23 Mcf/hr 1300 Btu gas capacity, the other 500 Mcf/hr 1000 Btu, both for peak shaving and standby on natural gas.

Propane peak shaving installations are widely recognized as the economic answer to the new demand and commodity rate schedules of the natural gas pipeline companies. Five million feet shaved off one winter peak day can effect savings of thousands of dollars in demand charges over the balance of the year.

Propane standby equipment, with adequate storage capacity, is the best known insurance against service disruption in the event of natural gas shortages or temporary transmission line failures.

PGC engineers draw on their experience with hundreds of utilities in analyzing your local situation-making recommendations—designing and constructing completely automatic plants to provide you with peak shaving and standby equipment at lower cost per Mcf in plant investment than any other type of equipment.

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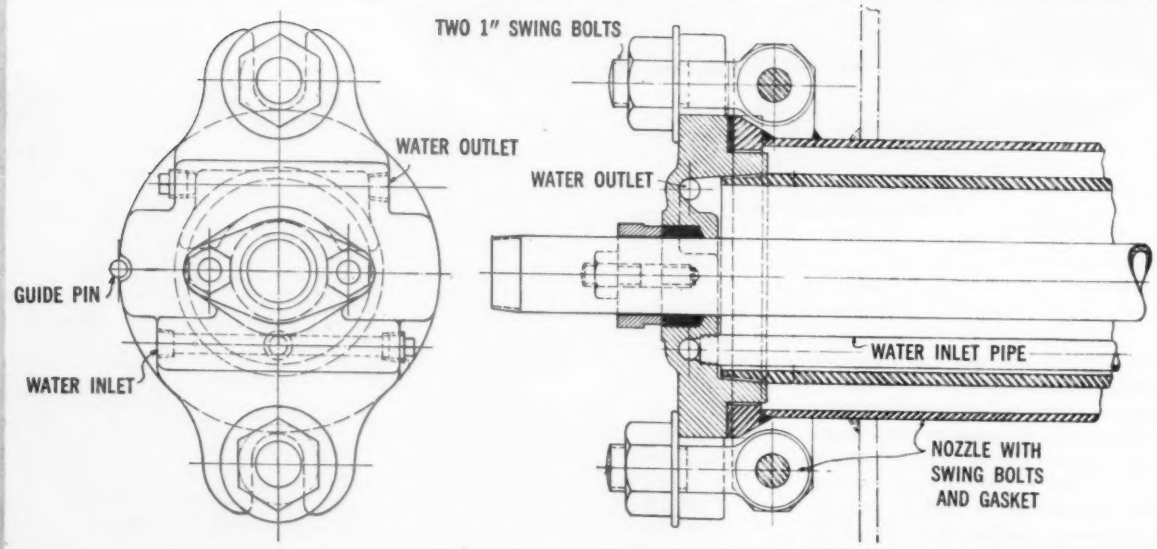

Every item of Semet-Solvay equipment, however small, is designed with *your problems* in mind:

1. For its long lasting qualities
2. For ease and convenience of operation
3. For budget economies

As an example of what we mean, look carefully at these two diagrams of a Semet-Solvay oil spray. When it becomes necessary to remove this oil spray from a Semet-Solvay oil gas machine there's no need to remove numerous nuts and bolts. Just loosen the two clamps which hold the flange in place and swing the bolt out of the way. Easy? Of course—it's Semet-Solvay engineered.

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News of the Gas Industry

C. E. BENNETT HEADS AGA
F. C. SMITH NEW VP

Charles E. Bennett, president, The Manufacturers Light and Heat Company, Pittsburgh, and vice president, American Gas

C. E. Bennett

F. C. Smith

Association, was elected Association president by the executive board. Mr. Bennett succeeds the late George F. Mitchell, who died March 26.

Frank C. Smith, president, Houston Natural Gas Corporation, Houston, was elected AGA vice president.

After graduation from the University of Wisconsin with a degree of B.S. in mechanical engineering, Mr. Bennett began his business career as a fire prevention engineer for the state of Wisconsin. He entered the public utility field as superintendent of gas plant for the Madison (Wisconsin) Gas and Electric Company in September, 1915, and became secretary and treasurer of the company in October, 1918.

Mr. Bennett was elected vice-president and general manager of the Binghamton (New York) Gas Works, in 1920. Ten years later, still holding that position, he became vice-president and general manager of the newly-created Binghamton group of Columbia Gas & Electric Corporation. In April, 1931, he was elected president and general manager of the company group.

Mr. Bennett was elected president and director of The Manufacturers Light and Heat Company and its affiliates in December 1935. On April 1, 1946, he again became president of the Binghamton Gas Works when it became part of the Pittsburgh group of Columbia Gas System, Inc.

When elected president of AGA, Mr. Bennett was serving as chairman of the natural gas department, vice-chairman of the AGA laboratories managing committee, and as chairman of the AGA executive committee on safety.

Frank C. Smith, the new AGA vice-president, has been president of Houston Natural Gas Corporation since 1933. He has served continuously from 1946 as a director on the AGA executive board, and last year was chairman of the general promotional planning committee. Mr. Smith was vice-chairman of the PAR committee in 1950, and is a member of the executive committee.

A native of Kentucky, Mr. Smith attended Vanderbilt University. He is president of the board of directors of the Texas College of Arts and Industries, Kingsville, and a member of the board of governors, Southwest Research Institute, San Antonio.

Senators Enter NE Pipeline Fray

Several New England Senators are taking sides in the pipeline company rivalry for bringing natural gas to that area. Senator Tobey (R., N. H.), in particular, made statements this week expressing his agreement with the U. S. Circuit Court of Appeals' decision setting aside the Federal Power Commission's order splitting the New England market between two pipeline companies. He contends that a single pipeline distribution arrangement would result in more economical and efficient transmission of natural gas in New England.

It is expected that FPC will appeal the recent court decision, setting aside for further hearing the order that divided the New England Gas market between the Northeastern and Algonquin pipeline companies. That FPC action is anticipated as a preliminary to seeking a review by the U. S. Supreme Court. FPC authority and procedures would permit reconsideration of the controversy in the hearings which the Circuit Court ordered.

Natural Gas for Boiler Fuel

Natural gas for boiler fuel at the rate of 30 MMcf per day was authorized by Examiner Marvin Farrington, Federal Power Commission, in his late-April decision on the application of Transcontinental Pipe Line Corp., to deliver gas to Duke Power Co., for use in a generating plant near Williamston, S. C.

Examiner Farrington pointed out that the deliveries would be made on an interruptible basis from volumes of so-called "valley" gas which Transcontinental cannot otherwise dispose of, either on a firm basis or for uses regarded as superior to that of boiler fuel.

The examiner's decision is subject to review by the Commission, either upon appeal by parties to the proceeding within twenty days or upon FPC's own motion within ten days thereafter. If no review is initiated, the decision will become effective after 30 days.

Sharples to Phila. Elec. Co. Board

At the annual meeting of Philadelphia Electric Company stockholders, Philip T. Sharples was elected a director, to fill the vacancy created by the retirement last month of Henry B. Bryans. Mr. Sharples, founder and chairman of the board of The Sharples Corporation, of Philadelphia, is also president or chairman of several companies engaged in the manufacture of centrifugal machinery and chemicals, and in oil production.

General Controls has Toronto Branch

The appointment of George Crothers as manager of the new Toronto branch office of General Controls Company was announced recently. The new branch, in the Commonwealth Building, will enable General Controls to more closely serve customers in the Toronto area.

Peoples Gas Elects Top Officers

Eskil I. Bjork today was elected president of The Peoples Gas Light and Coke Company, succeeding the late George F. Mitchell, by the company's board of directors.

Eskil I. Bjork

Leslie A. Brandt

Mr. Bjork has been an officer of Peoples Gas for 22 years. A vice president since 1941, he has been in charge of finance and personnel since 1945.

The board of directors also elected Leslie A. Brandt, vice president in charge of industrial relations. Mr. Brandt was director of employee relations and assistant to Mr. Bjork.

Mr. Bjork's career with Peoples Gas began September 16, 1920, as a ledger clerk. He became assistant secretary in 1930 and has been a company officer since.

Mr. Bjork is also vice president of Chicago District Pipeline Company, a subsidiary of Peoples Gas, and a director of Chicago and Illinois Western Railroad.

Mr. Brandt joined Peoples Gas in 1934 as staff auditor. Later he was executive office assistant of the comptroller's staff, supervisor in the statistical department, and budget director. He was appointed to his most recent position in 1946.

Wheelco Purchased by Barber-Colman

Barber-Colman Company, Rockford, Ill., purchased the principal assets of Wheelco Instruments Company, Chicago. Wheelco products consist of indicating, recording, and controlling industrial instruments, and combustion safeguards.

The Wheelco operations will continue in Chicago until manufacturing facilities can be transferred to Rockford with a minimum of interruption in shipments. No changes are contemplated in Wheelco's national sales and service organization.

Midwest Association Elects Officers

Mid-West Gas Association officers for 1952-1953, elected at the forty-seventh annual meeting in early April, are:

President, Amos H. Abbott, Northern States Power Co., Minneapolis; 1st vice president, E. E. Baxter, Central Electric & Gas Co., Lincoln, Neb., 2nd vice president, M. B. Cunningham, Iowa Power & Light Co., Des Moines, Ia., secretary-treasurer, Harold E. Peckham, Northern States Power Co., St. Paul.

(Continued on page 37)

California and Natural Gas
A Story of Pioneers

(Continued from page 17)

than 1,500,000 gas users on the lines of Southern California and Southern Counties Gas Companies through 1952," he said, "there are indications that more gas than is presently available will be needed to meet these demands by 1953."

The California Public Utilities Commission recognizes the need for additional out-of-state gas. A recent report states that California was dependent during 1951 on out-of-state gas for 36.9 per cent of all gas supplied during 1951, and that by 1953 the percentage will be 47.8.

"For the Southern Companies," said Mr. Banks in the article, "this figure is already well over the 50 per cent. In 1951, for example, Southern California Gas Company received 112 billion cubic feet from out-of-state sources and only 95 billion from California sources."

Rates have companies in bad spot

This tale of stupendous growth might well leave the reader with the impression that no industry in the United States could possibly be more prosperous than the California gas utilities. This is far from the truth.

While as yet no dividends have been skipped, or even reduced, ominous pronouncements from management indicate that the industry, for the first time in more than 30 years, is in a period of great need for higher rates. While revenues are up, costs are even higher. The principal factors impelling California companies to ask for rate relief are:

Higher price of purchased gas. SoCal Gas Company, for example, paid $4,317,000 more for gas in 1950 than for an equal amount of gas in 1940. El Paso Natural plans to file, by July 1, an application to FPC for rate increases of approximately $17 million to cover increased costs of every nature.

Higher labor costs. The average monthly straight-time wage in 1940 was $160.16 and is now $339.80, or 112 per cent higher.

Higher cost of connecting new customers. In 1940, the average cost of 50 feet of gas main in the street plus the gas meter and service pipe required to serve a customer totalled $75.00. Now the cost is more than $150.00.

Greater tax burden. In 1940, SoCal Gas Company paid out $1,356,147 in taxes. The 1950 tax bill was $4,675,000. Pacific Lighting's 1951 tax bill touched a new high of $22,204,000, an increase of $1,663,000 over the previous year.

While some rate relief has been granted, more has been applied for. Three rate orders issued by the California Public Utilities Commission in 1951 authorized P.G.&.E. to increase its annual rates for gas service by an aggregate $17,535,000. Increases totalling approximately $18,384,000 had been requested by the company in its application filed in June, 1950.

Until 1949, neither the Southern California nor Southern Counties gas companies had applied for a general rate increase in more than 30 years. Of the $11,832,600 increase asked for by Southern California, the Commission granted only $6,150,000. On August 17, 1951, the company again applied for increases in yearly revenue totalling $16,600,000.

In March 1950 Southern Counties Gas Company applied for an increase in annual revenue of $3,390,000. On January 22, 1952, almost 22 months later, this application was denied. On April 15, 1952, the company appealed to the State Supreme Court to set aside the Commission's decision denying the rate increase.

California appliance manufacturers

This phenomenal growth, which has followed the increasing population trend in California, has been made possible only through the concomitant growth in West Coast gas appliance manufacturers and in the development of a huge web of gas appliance dealers which covers the state from Oregon to the Mexican Border.

With the advent of natural gas, in the late 1920's, came the big demand for gas for space and water heating. Then, there were eight Pacific Coast gas appliance manufacturers. Today, there are 75 and each of these has a bigger operation than the largest had 25 years ago. Among these are twelve manufacturers of automatic gas water heaters, 30 manufacturers of space heating appliances, and the distribution of their products is by no means limited to the California market—or even to the Pacific Coast. In a 1951 estimate, 37 per cent of the water heaters and 50 per cent of the space heaters sold nationally were products of California manufacturers.

In addition to the production of what might be termed major gas appliances—automatic gas ranges, water heaters and space heaters—some of the nation's leaders in the production of thermostats, valves and controls are among the California manufacturers.

A manufacturers section of PCGA was formed in 1932, and has become one of the most active and useful departments of the Association. In 1936, the section affiliated with the Gas Appliance Manufacturers Association.

Appliances sold only through dealers

None of the gas utilities in California merchandises appliances.

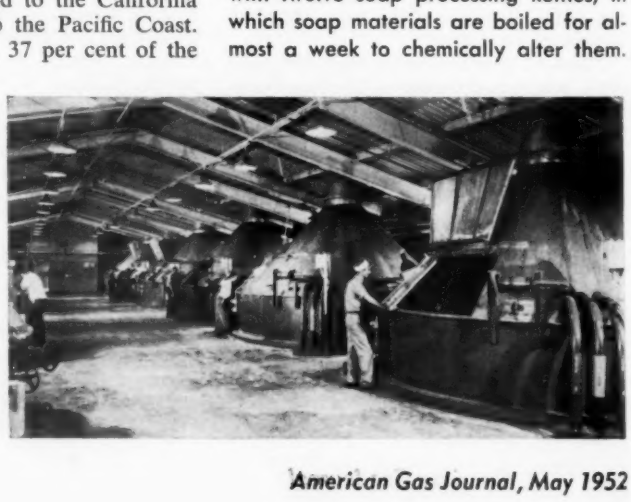
All sales are made through independent dealers, and measures are being taken to increase the sales effectiveness of the dealer sales front. Coordinated cooperation with such national campaigns as the Spring Style Show of automatic gas ranges is an evidence of the dealer cooperation being extended by the utilities.

Sales during 1951 fell off from the boom year of 1950 which felt the impetus of both a building boom and scare buying. PCGA made this educated guess on 1951 appliance unit sales totals:

Gas ranges	270,000
Water heaters	400,000
Central furnaces	44,000
Floor and wall furnaces	190,000
Direct heaters	70,000

California utilities saw a return, during 1951, to a more normal market with a need for greater emphasis on selling

Soap making became big business in California with the recent opening of the $25 million Lever Brothers Company plant. Here is a view of the kettle house with twelve soap processing kettles, in which soap materials are boiled for almost a week to chemically alter them.



the replacement market. Current campaigns will be directed at the thousands of outmoded ranges, water heaters and heating appliances still in use with sales material provided by both American Gas Association and PCGA directed to this end.

Natural gas has long played an essential role in the development of industry in California. PG&E and Pacific Lighting registered significant gains in 1951 over 1950 in revenues from industrial and gas engine customers: PG&E advanced 30.2 per cent; Pacific Lighting, 15.4 per cent.

Industrial growth in the state has been largely funneled into Los Angeles County, where post-war new plants and expansions have been at a rate 25 per cent greater than during World War II. Post-war, one of every five Los Angeles County factories has expanded.

The Los Angeles industrial area now ranks first, nationally, in the manufacture of aircraft and aircraft parts, motion pictures, pumps and compressors, refrigeration equipment and machinery, and canned sea foods. The area ranks second in automobile assembly, women's outerwear, oil field machinery and tools, automobile tire and tube production, storage batteries, heating and plumbing equipment. For almost all these industries, natural gas is the convenient and economical fuel.

Pacific Coast Gas Association

Since organization 59 years ago, with 54 charter members representing 43 gas companies in California, Washington, Oregon, and Utah, the work of PCGA has been characterized by unity of membership and willingness to pioneer. The Association has flourished since 1924 under Managing Director Clifford Johnstone, one of the most active and progressive trade group directors.

Pacific Coast personalities

The story of gas industry growth in California is the story of men with vision and the intelligence and will to bring their ideas to fruition. Many of the early builders of the California industry have passed on or retired—their achievements in the past formed the firm foundation for the present day gigantic structure.

Among these are E. L. Hall, who made major contributions to the science of making gas; R. M. Conner, organizer and first director of the AGA Testing Laboratories; Harold Basford, who pioneered appliance manufacturing on the West Coast; Franklin S. Wade, long-time industry leader and now board chairman of Southern California Gas Company, who with Charles H. Dickey first fostered the PCGA's cooperative advertising program. The career of the late C. O. G. Miller, chairman of the board of Pacific Lighting Corporation, virtually spanned the history of the industry in California.

Other leaders were Norman R. McKee and R. E. Fisher, who financed and planned the industry's exhibit at the Golden Gate International Exposition; and Harry L. Masser, who incorporated the PCGA.

Arthur F. Bridge, Southern Counties president, has served both AGA and PCGA as president and has long maintained an active role in the management of the AGA Testing Laboratories.

In a survey of this nature, it is not possible to cover in detail the many ramifications of the growth and development of an operation as large and complex as that of the gas industry in California. While a number of the names of industry leaders have been mentioned, it is by no means complete, nor has it been possible to describe in detail the contribution of the thousands of employees without whom the industry in California could not have achieved the high pinnacle of successful service to the public which it now enjoys.

Christian Otto Gerberding Miller

Christian Otto Gerberding Miller, founder and chairman of the board of directors, Pacific Lighting Corporation, passed away in San Francisco on April 23.

Mr. Miller's death, at 86, brought to an end a career which had been devoted to the development of the gas industry in California over a period of nearly 70 years.

Born in San Francisco, of parents who went West in the gold rush, he attended school there and in Oakland; later, the University of California at Berkeley. In 1883 he left college to become cashier of the San Francisco branch of the United Gas Improvement Company of Philadelphia. The following year his father, Albert Miller, then president of the San Francisco Savings Union Bank, formed the Pacific Gas Improvement Company to take over the interests of the Philadelphia company in California and Arizona. Mr. C. O. G. Miller became treasurer of the new Pacific Gas Improvement Company in 1886.

Mr. Miller was a charter member of Pacific Coast Gas Association, helping to found it in 1893. He was president of the association in 1908 and served as a director for several years. In 1941, he received the association's Medal of Honor. He was also a member and a former vice president of the American Gas Association.

Mr. Miller is survived by his widow, the former Janet McAlpine Watt; also a daughter, Mrs. Bernard W. Ford, and two sons, Robert Watt Miller, president, Pacific Lighting Corporation, and Albert Kendall Miller.

Put Best Foot Directly Forward Financial Analyst Urges

(Continued from page 21)

an attitude hardly seems justified or realistic.

Tell all!

But there should be no reason for acting as if a company were ashamed of being in the gas business! The chances are good that the consumer really is getting a lot for his money in the utility service rendered him.

The time has not passed for aggressive public relations. The industry is reestablishing its right to live.

The process has accordingly been very slow. FPC probably was never staffed with the idea of processing rate applications of a large number of companies at one time. This is confusing to investors, and their representative, the financial analyst, who advises them which securities seem most appropriate for the investors' purposes.

This confusion is spreading. Already it has had some adverse influence on the prices some pipeline companies have received for new security offerings, and seems likely to have an even greater effect if the rate situation is not clarified and speeded up.

The whole utility industry needs to take a good clear look at the regulatory machinery in each jurisdiction and see how it might be remodeled through legislation to better serve the needs of investors and consumers alike.

It could be very helpful to have one or two test cases carried to the U. S. Supreme Court to clarify the situation.

The analyst also questions whether the companies themselves are doing a good job of telling their stockholders and the security analysts just what is going on.

An aggressive, yet courteous and friendly attitude toward the regulatory bodies is to be desired.

Investors are watching these things. Some years ago few did, but today large funds like pensions, life and fire insurance companies, savings banks, trust departments, churches and colleges own substantial stocks of gas distributing companies and natural gas pipelines and other utilities. A much larger percentage of total stockholders may be classified as "informed investors"—they know their way around. They are likely to take keen interest in what is being done to protect a company's earning power. Some of these fund managers even call upon the state commissions in states where they have large utility investments.

No longer can management feel that stockholder groups are relatively uninformed and not interested in details of earnings or operations.

Sales and Technical Subjects Discusse

INDUSTRIAL AND COMMERCIAL SALES CONFERENCE

The gas industry pointed with pardonable pride, looked with some alarm, and was urged to do a little soul-searching—all at the three-day sales conference sponsored by the industrial and commercial section of American Gas Association, in Cincinnati during mid-April.

Gas as a chemical raw material

A colorful story of the use of gas in the chemical industry was presented to the conference by G. R. Walton, United Gas Pipe Line Co., Houston. He told of the use of natural gas in making chlorine, caustic soda, ammonia, detergents, alcohols, synthetic rubber, and numerous other chemicals. Newest development in this field is in the manufacture of acetylene.

Believe it or not, Mr. Walton declared, "a batch of gas-made cyanide mixed with gas-made acetylene ends up as a suit of clothes in the form of such commercial synthetic wool products as Orlon, Dynel, Fiber V and Acritlan."

While production of some of these synthetics is largely in the experimental stage, he added, new plants are being operated by DuPont in South Carolina and Chemstrand in Alabama, and projected by Union Carbide and Allied in Texas.

Noting that all these chemical products and by-products are "true children of the gas business," Mr. Walton concluded, "The tremendous amounts of money still being spent on new petro-chemical plants show the confidence of industry and investment houses in the future of the natural gas business."

Load factor and seasonal sales

Larry Shomaker, vice-president, Northern Natural Gas Co., Omaha, reported on his company's experience in improving load factors through seasonal sales.

After pointing out that the annual load factor is important in maintaining the company's economic efficiency, he told how Northern Natural has added seasonal load through dehydration plants, canning, brick and tile plants, cement plants, creamery business, packing industry, electric generating plants, malt products, sugar, flour and cereal mills, paper plants and summer air conditioning.

"State industrial commissions and chambers of commerce in many areas are joining gas utilities in efforts to attract new industries to their territories," Mr. Shomaker said.

View industrial gas more progressively, Hess urges

The usefulness and scope of high speed gas heating for industrial processing were explained in an illustrated talk by Frederic O. Hess, president, Selas Corporation of America. He called for the gas industry to evaluate this type of heating more progressively "because our processing and production industries must do justice to the requirements of industrial and economic development."

Mr. Hess deplored the fact that "the forward march of heating techniques is being handicapped by the shortage of gas or, to be more specific, the far-spread habit of interruptible gas supply for industrial heating."

Installations should be made for one fuel only, he continued, "and on that basis gas would offer the best end results, lowest initial investment, and be non-convertible."

Gas in industrial rearmament

Support for Mr. Hess' position was provided by the next speaker, Henry M. Heyn, Surface Combustion Corporation, Toledo, who spoke on "Industrial Gas in the Rearmament Program."

Discussing availability of gas supply, he pointed out the wide range of utility practices. Some utilities shut down industrial gas uses at the very first cold wave, he said. Others have planned and provided so well that "there has been no shutdown of industry for years."

As a solution he suggested that rate structures be revised "to take into consideration the normal laws of supply and demand rather than the immediate demands of the electorate."

Industrial gas applications in the rearmament program are "as broad as the use of industrial gas itself," according to Mr. Heyn.

Industrial fuel engineering as a profession

Industrial fuel engineering as a profession is on the threshold of recognition, D. A. Campbell, Eclipse Fuel Engineering Co., Rockford, Ill., told the conference. While only a few colleges give degrees in this field, at present, engineering requirements are becoming more exact and the demand for trained engineers in this field is certain to grow. He urged AGA and the entire industry to build a program on the professional level.

"Only by building up our vocation to the acknowledged status of a profession can we hope to attract the considerable number of young engineers needed to exploit the possibilities of improved fuel combustion techniques."

Do engineering schools use gas?

Terry Hart, Nashville Gas Co., presented the results of a survey which showed that the gas industry is losing ground in educating tomorrow's customers.

Mr. Hart queried 123 universities as to the fuel being used for heat treating in the laboratories of their engineering schools. Of the 114 who replied, 59 use 75 per cent or more electrical equipment; only 15 use 75 per cent or more gas for heat treating. The remainder have gas and electric equipment, in a fifty-fifty proportion, he said.

Especially significant, Mr. Hart said, was the fact that 54 of these universities indicated that they will replace present heating equipment with 100 per cent electric equipment. Only ten planned to replace their equipment with all-gas equipment.

Industrial gas as a load balancer

H. Carl Wolf, AGA managing director, who replaced the late George F. Mitchell on the conference program, outlined some ideas Mr. Mitchell had planned to present.

He emphasized the essentiality of industrial load to the gas industry, pointing out that it represents 30 per cent of total revenues, improves load factors, and holds down rates for other sales. Mr. Wolf also spoke about the problem of balancing demands to provide firm gas supply for uses where form value is essential. He added that interruptible business is a part of the gas industry's economic picture.

A good gas customer speaks

Charles H. Burchenal, president, The Cambridge Tile Manufacturing Co., Cincinnati, declared himself to be a "rabid booster for gas" after his experience as one of the five largest users of gas near Cincinnati.

"I've got to be," he said, "as the tile industry can't operate without it."

"The industrial user should not be expected to stand the costs resulting from failures on the part of his supplier," Mr. Burchenal continued.

The gas utility must accept responsibility for solving the gas supply problem which is constantly threatening loss of public and industry good will, he said.

As a solution to this problem, Mr. Burchenal suggested legislation to enable the utility distributor to control the situation.

"Give him the right to limit the installation of new gas-burning equipment; empower him to refuse to supply new installations which might jeopardize a continuous supply; and, finally, authorize and provide a special rate for large summertime gas users who have adequate standby. . . ."

Service linked to selling

George W. Leidholdt, Central Indiana Gas Co., Muncie, echoed Mr. Buenger's recommendations in his address, "Our Best Sales Tool—Service."

Mr. Leidholdt emphasized that service is just as important a buying appeal to commercial cooking customers as low original equipment cost and low cost of upkeep.

Competition claims and repeats claims

The inroads of competitors were cited by Hayes S. Walter, AGA commercial representative.

"We have come to the realization that merchandise is not bought solely because of price. The constant repetition of the claims made by electrical equipment manufacturers are being imbedded more firmly in the minds of our customers and prospects."

AGA and PAR promotional efforts are being multiplied, to combat these claims and to expand the gas industry's important stake in this valuable commercial load, Mr. Walter said.

Two AGA Conferences

DISTRIBUTION, MOTOR VEHICLES AND CORROSION CONFERENCE

The results of studies, conducted over a number of utilities and some entirely within one company, were presented for the general guidance of the gas industry at the distribution, motor vehicles and corrosion conference conducted by American Gas Association in Philadelphia, during the second week of last month.

The wide interest in the subjects was evidenced in the gratifying attendance of more than 1,100 executives and technicians concerned.

Mechanization for underground work

"Developments in Mechanical Equipment for Underground Work" was the subject of Clifton R. Newlin, operating engineer, New Orleans Public Service Inc., told of a questionnaire of a study of 21 utilities.

"Every attempt is being made to mechanize each single operation," he reported. "However, where previous emphasis was placed on the larger operations, such as trenching and backfilling, there seems to be an increasing interest in improved mechanical equipment for such operations as: concrete and asphalt breaking, light backfilling, soil compaction, bell joint clamp installation and soil handling and removal.

"There remains lively interest in small trenching machines of all types and there is every indication that this will continue. The manufacturers of this equipment are to be congratulated for their efforts to provide our industry with such a variety of machines."

The economics of metering

A detailed study of the "Current Application of Metering Economics" was presented by George K. Bachmann, general superintendent of meters, gas department, Public Service Electric and Gas Co., Newark, N. J. He advocated a periodic study of the application of principles of economics of metering, "because of the varying character of underlying data over the years. Rising meter maintenance cost with age is considered by some to be, in itself, cause for meter obsolescence in the neighborhood of age 25 years, but an arithmetical analysis . . . shows that there must be a sharp rise in maintenance cost over ordinary levels at that time for this consideration to be true.

"Economic life of a meter in the Public Service Electric and Gas Co. appears to be 30 years," Mr. Bachmann said. "Large savings in metering expense can be made only on an extended periodic meter change basis. During the cycle of periodic meter changes occurring after conversion to a mixed gas, economic study favors the standard change period. . . ."

Protection against corrosion in New York

"Corrosion Protection of Natural Gas Main in Greater New York" was the subject of an address by F. E. Kulman, assistant engineer, Consolidated Edison Co., of New York, Inc.

Through the cooperation of five utility companies, "insulating joints were installed at river crossings, bridge and tunnel crossings, entrances to gas plants and at other selected locations to prevent electrolytic action by stray and long line currents. The pipe coating selected was a double coating of plasticized coal tar enamel with a glass fibre reinforcement and asbestos felt shield.

Electrolysis surveys on the completed installation show that adequate protection," Mr. Kulman said, "as evidenced by an 0.5 volt drop across the coating, is given by cathodic protection currents averaging 0.1 ampere per mile of main."

Six years of plastic tubing

After six years of using plastic tubing for service installations, Gordon G. Dye, supervising engineer, district general office, Southern California Gas Co., reported that it is all still in service, except small quantities removed as the result of service alterations. "Sampling inspections of plastic tubing in natural gas distribution service have revealed no defects of mechanical weaknesses which would indicate that plastic tubing may not be satisfactory for underground gas service piping. No disturbing case of damage to or leaks in plastic tubing or connections has been reported, and no change in the physical characteristics of the plastic can be detected."

Mr. Dye limited his statement to natural gas conditions and explained that there is some evidence that Tenite II, from which the tubing used had been made, is not resistant to aromatic hydrocarbons such as are present in manufactured gas.

Coordination is servicing consideration

In his talk on "Appliance Servicing as Affected by Varying Gas Conditions, W. C. Peters, gas distribution engineer, Northern States Power Co., St. Paul, Minn., emphasized the importance of close inter-departmental coordination. The closer coordination that is maintained between the divisions responsible for quality, purification, pressure control, gas conditioning and safety, the better the end product should be, he said.

"Utilization can do its part by keeping production and distribution informed. . . ."

Economics of advance corrosion control

"Several economic advantages can be realized if the corrosion control program begins with the initial design of the pipeline," advised O. W. Wade, corrosion engineer, Transcontinental Pipe Line Co., Houston, in his address on "Soil Resistivity Instruments and Measurements."

"In the analysis of all soil corrosion problems and the design of facilities for soil corrosion mitigation, the soil resistivity must be considered," Mr. Wade said. "All soils are corrosive as indicated by the varying values of resistivity which are an index to the different chemical concentrations in solution."

HALL OF FLAME AWARDS AT INDUSTRIAL-COMMERCIAL CONFERENCE

Receiving Hall of Flame certificates during AGA industrial and commercial sales conference, (left to right): Stanton T. Olinger, Cincinnati Gas & Electric Co.; George E. Duane, Dayton Power and Light Co.; E. V. K. Schutt, Central Hudson Gas & Electric Gas Corp.; Ray G. Juergens, East Ohio Gas Co.; Ronald A. Malony, Bridgeport Gas Light Co. Also, R. J. Vandagriff, Laclede Gas Co., St. Louis, who was not able to be present.

Economic Position of Gas Meters

The reconditioning, repairing, and testing of gas meters is one of the major activities in the gas utility business. Considered on a national basis there were 22,146,000 residential customers and 1,739,000 commercial customers at the end of 1950, nearly a million being added in the year, 1950. No doubt, there were at least 23,885,000 meters in service at the end of 1950. At an average value of $20.00 per meter this investment would total $477,700,000.00. To this may be added the investment of utilities in meter shops and meter repair equipment and the very large investment of companies engaged in the manufacture of meters.—James W. Chrisman, The East Ohio Gas Co., addressing AGA conference on distribution, motor vehicles and corrosion.

use VULCAN'S ACCORDION DIAPHRAGMS

Gas distribution men want to know that their meters are accurately tuned.

With VULCAN accordion style molded loop diaphragms in your meters, you'll keep in tune with progress.

Being completely oil-less, VULCAN Diaphragms never dry out or stiffen. Their molded shape provides maximum flexibility and uniform stroke, with minimum pressure absorption.

Seams are *vulcanized* — not stitched. An extra vulcanizing and wire tie-down at the rings safeguards against leaks. Each diaphragm is pressure-tested . . . proved leakproof before leaving the factory.

Save on oiling costs and unnecessary service calls. VULCAN Diaphragms will give you accuracy with economy.

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Company Would Import Mexican Gas

Texas-Ohio Gas Company, Houston, has filed applications with Federal Power Commission requesting authority to import natural gas from Mexico and for a Presidential Permit for the construction, maintenance and operation of facilities for the proposed importation.

Hearings on Texas-Ohio's pending application for authority to construct a natural gas transmission line from Texas to West Virginia were adjourned April 17 until further order of the Commission, after the staff counsel filed a motion to dismiss the proceeding.

Texas-Ohio said that it plans to purchase 200 million cubic feet of natural gas per day from Petroleos Mexicanos, which owns and controls large gas fields in the State of Tamaulipas, for delivery at the United States—Mexico border, the southern terminus of Texas-Ohio's proposed gas line.

The gas would be produced in eight fields of Tamaulipas, in northeast Mexico, which contain total marketable natural gas reserves of over two trillion cubic feet, the application states. These reserves are dedicated to the purposes of Texas-Ohio's proposed pipeline under the terms of a negotiated contract between the two companies. Texas-Ohio said that the contract has been written but not formally executed.

Texas-Ohio's proposed 1,439-mile 30-inch pipeline, for which an application was filed last October, would originate at the Rio Grande River on the U. S.-Mexican border in Hidalgo County, Texas and extend through Arkansas, Mississippi, Tennessee, Kentucky and Ohio, terminating near Spencer, W. Va.

Project Texas-Northwest Line

The prospect of natural gas line from the Southwest to the Northwest has been revived by Pacific Northwest Pipeline Corporation, which proposed two years ago to Federal Power Commission the building of a 2,000-mile line from the Texas Gulf Coast to the Pacific Northwest at a cost of around $175,000,000. C. R. Williams, president, said recently that there is now a "hope for a gas line from the Southwest to the Pacific Northwest states." He said a new or revised proposal would have to be filed with FPC, and also suggested that a new plan might originate the line at some point other than the Gulf coast. Pacific Northwest Pipeline is backed principally by Ray Fish, of Fish Engineering Corp., Houston.

New England Wholesale Rate Rise

A suspended wholesale natural gas rate increase, totaling about $749,000 annually, will go into effect as of April 1 upon the posting of a $75,000 bond by Northeastern Gas Transmission Company, with the Federal Power Commission, according to the commission's announcement late last month.

Northeastern's rate increase amounts to 7 cents per Mcf. The increase, from about 45½¢ to 52½¢, which applies to wholesale natural gas service in New England, was filed with FPC last October 1, to go into effect on November 1. Public hearings on the proposal by FPC commenced last month and are now in recess.

W. F. Laird Ohio Fuel Gas Secty.

Three new officers elected in The Ohio Fuel Gas Company, Columbia Gas System's Columbus Group, are W. F. Laird, secretary; W. D. Betsch, assistant vice president, and L. H. Longanbach, assistant treasurer.

Mr. Laird has been resident attorney for the firm and will continue in that capacity while secretary. He succeeds John M. Rutherford, who was elected treasurer in February and who has been secretary-treasurer since.

Mr. Betsch, assistant treasurer since March, 1950, was named assistant to James A. Scanlon, vice president in charge of rates and regulations. Mr. Longanbach has been supervisor of the statistical department and now will be assistant to Mr. Rutherford.

Safety Award to Peoples, Pittsburgh

Divisions of the Peoples Natural Gas Company, Pittsburgh, contributing most to the establishment of the 1951 safety record that earned the company first place recognition by the National Safety Council were honored recently at a luncheon.

Christy Payne, Jr., Peoples vice president, presented the Council's first place plaque to Leo Neufer, Safety Director.

Peoples achieved its first place ranking of the twenty competing gas companies.

Heath Tree Service Names Managers

C. A. Heath

Charles A. Heath, Richmond, Michigan, has been named vice president in charge of operations and as midwestern division manager of Heath Tree Service, Inc., Wellesley, Mass., and Richmond, Mich. The corporation has also named Stuart B. Eynon, of Lynn, Mass., as eastern division operations manager.

TETCO Delivers Gas from New Line

Texas Eastern Transmission Corporation has begun initial operations of its new 30-inch pipeline as far north as the Ohio River, delivering gas to the Appalachian area through connections with the Columbia Gas System. The remainder of the line will be completed this summer. When regular operations begin, plans provide for Texas Eastern to build up deliveries gradually to about 400 million cubic feet per day through the new 30-inch line. Total delivery capacity of the company will then exceed 1.2 billion cubic feet per day.

New Pipe Coating Yard in Charlotte

Rosson-Richards Company announces the opening of a new pipe coating and wrapping yard in Charlotte, N. C. This is their fourth permanent yard; others are in Jackson, Miss., Corpus Christi and Houston, Texas. The Charlotte installation has the capacity to coat and wrap 10,000 to 30,000 feet of pipe per day in sizes from ¾" to 30".

Four Officers Advance in ML&H Co.

C. A. Massa

Manufacturers Light and Heat Company has advanced four officers:

C. A. Massa has been named president of Manufacturers and Pittsburgh Group Companies in Columbia Gas System. Mr. Massa, formerly treasurer, has been with Manufacturers since 1930.

C. F. Waterman will assist Mr. Massa as assistant vice president. He has been an assistant treasurer since 1946; and joined Columbia in 1927.

C. H. Goetz has been elected treasurer of the company and its affiliated companies. Mr. Goetz began his career as accountant with the gas company in 1924 and in successive promotions advanced to assistant treasurer.

K. M. Redinger, formerly chief accountant, has been elected assistant treasurer. He has been with Manufacturers for 35 years.

All four men will continue their headquarters in the Pittsburgh general offices.

Fla-Ga Association Elects Officers

The officers of Florida-Georgia Gas Association for the 1952-1953 term, elected at the recent meeting, include:

President, Francis Middleton, City of Clearwater, Clearwater, Fla.; vice-president, Alvan H. Stack, Tampa Gas Co.; Secretary-treasurer, Robert E. Gresimer, Jacksonville Gas Corp.

Natural Gas Found in Nova Scotia

Natural gas has been found for the first time in Nova Scotia, near Antigonish, according to the Provincial Industry Department, Associated Press reports from Halifax. Dr. Don J. McNeil, geologist in charge of drilling operations for the department, found the gas, at about 400 feet, while directing exploration in connection with salt and limestone deposits at Antigonish Harbor. Dr. McNeil was said to have described the find as encouraging, but warned against "undue optimism as the discovery may not be of commercial significance."

Fulton Sylphon Buys Seal Rights

Fulton Sylphon division of Robertshaw-Fulton Controls Company, Knoxville, Tenn., announces the acquisition of all manufacturing, sales, and patent rights in the seal developments of Renniks Company and Ralph L. Skinner, Sr. of Detroit, Mich. Operations have been transferred to its Knoxville plant.

Ralph L. Skinner, Sr. will continue to actively participate in the seal program as a consultant on design and applications problems. Ralph L. Skinner, Jr., has joined the sales department of Fulton Sylphon division as sales engineer.

Fulton Sylphon Division's William Watkins, Jr., seal engineering specialist, has been placed in charge of the Fulton Sylphon sales program.

Dresser Appoints Russell W. McIntosh

R. W. McIntosh

Russell W. McIntosh has been named corrosion products representative for the Western and Pacific Coast district by Dresser Manufacturing Division. Mr. McIntosh has been with Koppers Company, in the tar products division and with Pittsburgh Coke and Chemical Company in the protective coating division. He will work from the Dresser Industries offices at San Francisco, and Houston.

Lone Star Seeking Rate Rise

Lone Star Gas Company will seek increases in residential and commercial gas rates in the 375 cities and towns which it serves in Texas and Oklahoma, stockholders were told at their annual meeting in Dallas. The proposed rate changes affecting approximately 600,000 customers "will be gone into this summer." This will be the first general revision in Lone Star's rate structure since May 1942, when the company reduced rates 13 per cent.

W. R. Hainsworth Joins Rheem

Dr. William R. Hainsworth has joined the general engineering division of Rheem Manufacturing Company, and will be stationed at the Rheem engineering laboratories in Whittier, Cal.

Dr. Hainsworth's previous post was vice-president and staff consulting engineer for Servel, Inc.

A leading refrigeration engineer, Dr. Hainsworth has made contributions which have won wide recognition, among them the 1933 Munroe award of American Gas Association for his developments in the air-cooled Servel refrigerator.

Eureka Williams Forms Gas Division

The organization of Williams Gas-O-Matic division of Eureka Williams Corporation, Bloomington, Ill., was announced last month.

The division, headed by A. F. Ward, sales manager, will promote and sell a new line of automatic gas-fired heating equipment.

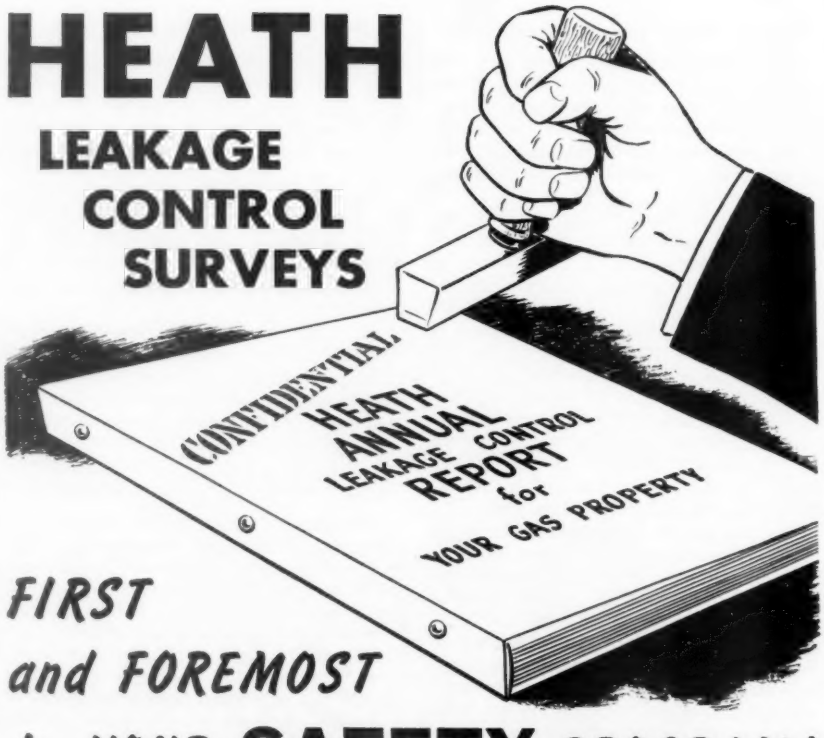
Forty-one Gas-O-Matic models of five basic units are now in production, including forced air furnaces, gravity furnaces, atmospheric conversion burners and power type conversion burners.

All units are A.G.A.-approved for use with all gases—natural, mixed, manufactured and LP. All "supplementary utility requirements" are met, and all units carry the Underwriters' label approving close-clearance installations.

Hewitt-Robins Has Kansas City Office

Hewitt-Robins Inc. have opened an office in the Porter Bldg., 406 W. 34 St., Kansas City, Mo. Robert E. Crane, field engineer, will be in charge of this office, representing Hewitt-Rubber, Robins Conveyors and Robins Engineers.

HEATH
LEAKAGE CONTROL SURVEYS



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Milton W. Heath originated this modern type of survey 20 years ago and has developed it continuously ever since. Today Heath serves over 400 gas properties in 40 states and five Canadian provinces . . . renews its contracts year after year almost 100%.

For many years Heath has employed only graduate foresters and placed them in the field only after rigid training under its most experienced men. In fact, all important progress in present day survey techniques, training, classifications, and types of reports have been brought about by Heath employees.

Heath conducts all types of surveys in all sections of the country during all seasons of the year. Daily reports cover each leak location with proper classification. Heath surveys are *more* than vegetation and soil surveys — they are intensive, all-over leakage control surveys.

After each survey Heath gives you a bound loose-leaf volume containing the original copy of each leak report; plus special reports on cases involving possible claims where gas is not concerned; also on greenhouses, schools, churches and public buildings.

The fact that Heath is the only nationally recognized leak location agency lends authority to its reports and opinions.

Heath reports — *all confidential* — are highly rated by your insurance company and will stand up for use by your claims department . . . Heath Reports can save you thousands of dollars every year. Don't delay! Decide today on a Heath Survey!

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Midwestern Office — Richmond, Michigan

MEN AT WORK

CHARLES A. ANDERSON has been appointed chief accountant, *The Peoples Natural Gas Company,* Pittsburgh.

J. W. J. BERCHER has been transferred to *Texas Eastern Transmission Corporation's* general office engineering department, Shreveport, La.

JAMES G. BERGMAN is cashier, *New York State Natural Gas Corporation,* Pittsburgh.

ARTHUR R. BLOTTER has been appointed chief accountant, *New York State Natural Gas Corporation,* Pittsburgh.

WILLIAM E. BOWMAN is in the sales training program of the thermostat division, *Robertshaw-Fulton Controls Co.,* Youngwood, Pa.

ROY R. BUSH has been appointed Tulsa district sales manager, *Rockwell Manufacturing Company.*

GEORGE G. DORMER is now assistant chief engineer of *The Manufacturers Light and Heat Company* and associated companies in Columbia Gas System.

HARRY H. FILLER has been named manager of manufacturing in all plants of *Rheem Manufacturing Company.*

M. D. GILBERT is Kansas City district sales manager, *Rockwell Manufacturing Company.*

O. HALLBERG is metropolitan New York sales representative for *Delta Heating Corporation,* Trenton, N. J.

R. H. HEDGES has been advanced by *Rockwell Manufacturing Company* to sales engineer in the Kansas City territory.

WILLIAM M. KREILING is sales representative for Mor-Sun Furnace Division, *Morrison Steel Products, Inc.,* in Kansas and western Missouri.

HAROLD P. MUELLER, JR., has been appointed assistant sales manager, *L. J. Mueller Furnace Company,* Milwaukee.

JOHN R. PATTERSON has been appointed assistant division manager of *Texas Eastern Transmission Corporation's* division two, headquartered in Seymour, Ind.

H. O. PROSKE is the new service manager for *Rockwell Manufacturing Company,* Pittsburgh.

WILLIAM C. SCHNEIDER is now the sales representative of *Selas Corporation of America* in central and western New York, with headquarters at 315 Brooklawn Drive, Rochester 18.

ROBERT E. SEYMOUR has been appointed assistant treasurer, *The Peoples Natural Gas Company,* Pittsburgh.

CARL R. SISSON has been transferred as assistant division manager to *Texas Eastern Transmission Corporation's* division three, headquartered in Chester, Pa.

HAL SLOCOMB, JR., has been appointed advertising coordinator by *Ebasco Services, Inc.*

JOHN E. SPEARS has been named assistant general manager of the gas and coke division of *Koppers Company, Inc.,* Pittsburgh.

M. P. STILLINGER has joined the Grayson Controls division, *Robertshaw-Fulton Controls Company,* as sales engineer.

FRANK F. WINCKEL has been promoted to division engineer of *Texas Eastern Transmission Corporation's* division two, Seymour, Ind.

Goodfellow is GSM for Rheem

W. S. Goodfellow

William S. Goodfellow has been appointed general sales manager of Rheem Manufacturing Company.

He has had seventeen years' experience in container and appliance sales for Rheem. Previously he was regional sales manager for Rheem in Chicago and assistant sales manager of the Pacific coast region. Mr. Goodfellow will be at the Rheem headquarters in New York.

Koppers Names Production Manager

F. L. Byrom, superintendent, Follansbee, plant, tar products division, Koppers Company, Inc., has been named production manager of the division.

At the same time, F. M. Smith, assistant superintendent of the Follansbee plant, has been promoted to the position of superintendent.

Mr Byrom now is attending the advanced management course, School of Business Administration, Harvard University and will assume his new duties in June.

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Appliance Servicing by Gas Utilities Valued as

Ace in the Hole

(Continued from page 19)

an important factor, along with a strongly cooperative dealer appliance program, in developing the active participation of the major gas appliance manufacturers in the Philadelphia market.

Extent of utility appliance service

In rendering "free" adjustment service to residential gas appliances where no parts are required, the utility is not competing with private agencies, as none are set up for this purpose, except where the utility has withdrawn or largely withdrawn from appliance servicing.

Such is not the case with service involving replacement of parts. Within the warranty period, this is properly the responsibility of the selling agency, but may be assigned to the installing agent, distributor or manufacturer, and is usually provided, independent of the utility.

Beyond the warranty period, private agencies are usually available for parts replacement, particularly for water heating and central heating appliances. Where such replacement parts service can be promptly obtained from private agencies at a reasonable charge to the customer, and where it is of acceptable quality, there is no obligation on the utility to provide such service.

There is a utility advantage in rendering such service however, as parts replacement frequently means replacement of the entire appliance instead. When the situation is brought to the utility's attention through a customer's request for service, the utility is then in a better position to make certain that a new gas appliance is installed, rather than a competitive one.

Where the utility competes with private agencies in providing parts replacement service, it should quote prices comparable to those charged by other agencies. However, when other agencies rendering a satisfactory service are not available, then it is the obligation of the utility to provide parts replacement service, at a charge, to insure the continued operation of its customer's gas appliances.

Service costs included in rate

Assuming that the utility's and its customer's best interests are served when the utility itself renders appliance adjustment service, the immediate question then becomes, should it be included in the rate, or should a direct charge be made?

In the straight gas utilities particularly, the cost to the utility of "free" adjustment service is almost the only argument against it.

The arguments for it are many and substantial. When a charge is made, the utility loses all customer-good will and dealer-encouragement that would otherwise be gained. Customer-dissatisfaction results, particularly if such service was previously rendered without charge.

In charging for service, the utility must either establish a pre-payment service policy that antagonizes many customers, or accept the additional trouble and expense of collecting and, in part, writing off a vast number of small customer service charges.

A utility charge-for service policy encourages the development of private servicing agencies, where the quality of the service rendered is highly questionable. These agencies rapidly assume a proprietary interest in servicing, thereby forcing the utility to set high customer servicing rates, in order that private agencies may show a satisfactory profit.

Utility service charges can reach the point where they become prohibitive in the customer's eyes. For example, one utility charges $4.00 for the first one-half hour and $1.30 for each one-quarter hour thereafter, on appliance adjustment work. This is a strong inducement for customers to refuse to have their appliances adjusted, thereby creating hazardous conditions.

When such cases come to the utility's attention, it then has the unhappy choice of either shutting off the appliance or adjusting it without charge. It must be well recognized that we have not yet reached the point where our industry can afford to throw customers away; it is increasingly apparent that utility charge-for service is closely comparable in its end results to a no-service utility policy.

Based on these considerations, it is the policy of The Philadelphia Gas Works Company to include all appliance adjustment service in the gas rate, and to make no direct customer charge. We believe that it represents the lowest cost method of rendering adjustment service to the customer.

Cost of appliance adjustment service

In considering costs, the question may well be raised, not if the utility can afford a "free" servicing policy but, rather, if the utility can afford not to have one.

Such service in P. G. W. amounts to an operating revenue deduction of eighteen to nineteen cents per customer per month, including all direct and indirect charges incident to it. We regard this as a very nominal charge, considering the benefits the company derives from this service. It may be regarded as a premium paid on an insurance policy guaranteeing the healthy future development and growth of the residential gas market.

Considering the relative static condition of gas rates in our inflated economy, it is not unreasonable to assume that there would be no substantial customer objection to a minor rate increase attributable to the provision or continuance of a "free" utility servicing policy. The pennies-per-month cost to the customer is negligible compared to other living expenses.

It has been repeatedly demonstrated in other industries and in our own, that the cost is secondary if there is complete customer satisfaction with the service received. In fact, it is our belief that the assurance of continued "free" servicing by the utility may well justify rate increases for other purposes, as servicing is a tangible benefit that the customer can readily understand.

It is to be hoped that utility managements will give careful consideration to all the factors involved in "free" utility servicing, before effecting policy changes in this important customer service. Of significance in this respect, is the utility's attitude toward its residential gas load. If it is one of indifference, which is regrettably the case with some utilities, then no amount of favorable argument can influence the utility to provide appliance service. If, however, as with most straight gas utilities, there is a strong determination to retain and expand the residential gas load, then management should weigh carefully both the short term and long term advantages to the utility of "free" gas appliance adjustment service, before committing their companies to an adverse change in policy.

Cullman of Columbia to PAD

A. A. Cullman

Alan A. Cullman, controller, Columbia Gas System Service Corporation, has been appointed director, gas planning division, Petroleum Administration for Defense, on a year's leave of absence from Columbia.

Mr. Cullman has been with the New York office of Columbia since 1930 and has served principally in the financial departments, including accounting, statistical, budgetary control and research, development and accounting methods.

NEW EQUIPMENT

Gas odor intensity indicator

A new instrument designed to measure odor thresholds and levels in fuel gases has been introduced. The instrument is said to be equally effective on LP, natural or manufactured gas. The instrument is engineered to fill the need for a small, portable instrument to measure odor thresholds in LP gases.

According to the manufacturer, the meter will accurately, safely and simply show the odor intensity of any type of fuel gas within the lower limits of combustibility, anywhere within a distribution system. It is said to take the guesswork out of odorizing processes and odor detection. The exact gas-air mixture at which odor is detectable is indicated on a gauge and is instantly readable without reference to graphs, scales or specific gravity charts. It will test and indicate the levels of odor intensity well within the requirements of the various state and national requirements. The one-unit device measures 3″ x 6″ x 7″ and weighs 54 ounces, and can be used either in-or-outdoors. *Odicator.* United Petroleum Gas Co., 806 Andrus Bldg., Minneapolis 2.

Fittings for plastic or steel pipe

A new line of malleable iron threadless fittings for joining standard-size plastic or steel pipe, with ten different types and 111 different sizes are being offered. Fittings available are couplings, adapters, 90° elbows, adapter elbows, tees (straight and reducing), tees (with threaded branches), and reducers and increasers. The size range is from ½″ through 2″. Fittings are factory-assembled and ready to use on plain-end pipe, without threading. Pipe end is simply inserted into fitting, and fitting end nuts tightened with an ordinary wrench. Besides eliminating the time and labor of threading, the fittings produce a stronger connection because pipe wall is not weakened by threading, the manufacturer claims. Rubber gaskets inside the fittings protect pipe from the strains of contraction, expansion and vibration. Fittings hold joint permanently tight, are not affected by the properties of air, water, gas, gasoline, butane or propane, and will withstand temperatures to 275° F. The fittings are treated with a special rust preventative. Gaskets are neoprene. Fittings are said to be suited for use in original small-diameter plumbing installations or repairs, in industrial piping, chemical plants, gas piping, lawn sprinkler systems, machinery, appliances. *Telsco Fittings.* Texas Lawn Sprinkler Co., Inc., Telsco Fittings Division, 5422 Redfield Street, Dallas.

Pneumatic and hydraulic cable

Pneumatic and hydraulic control circuits may now be streamlined through the use of a flexible, protected multi-tube transmission line, made up of ¼″ od. aluminum or copper tubing gathered in a slow continuous spiral similar to the construction of rope. The tube bundle is wrapped in water-repellent insulating tape, then encased in rust-resistant, galvanized steel strip like that used for BX electrical cable. The cable has been designed to (1) cut installation time and costs; (2) save critical materials; (3) protect instrument and control connecting lines; (4) conserve space, and (5) improve plant appearance. Available in 4, 8 and 12 tubes, the cable is capable of transmitting hydraulic control pressures as high as 3000

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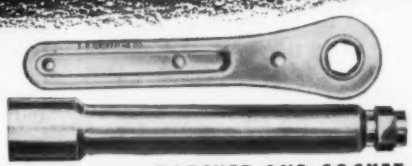
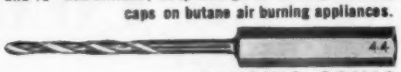
DIXON FIVE CORNERED REAMERS

For reaming and cleaning orifice openings. The following sizes in stock: 40, 45, 50, 52, 54, 55, 56, 58, 60, 62, 64, 65, 66, 68, 70, 72, 74, 75, 76, 78, 80. Numbers denote twist drill size at larger end of reamer.



RATCHET AND SOCKET

Speed up changing orifices. Socket handles 7/16″ and ½″ hex orifices; deep enough for velocity reducing caps on butane air burning appliances.



GAUGING DRILLS

Fine quality, high carbon steel, with brass hex handles. Set of 40, ranging from 41 to 80, inclusive, with number stamped on handle.

G-3800 GRIFTITE MULTI-PURPOSE CAP ORIFICE

⅜″ x 27 thread 1¾″ O.A.L. ½″ Hex. Special thread adapts itself to variations in valve diameters and maintains tight, leak-free joint. Fits varying lengths of Venturi tubes. Can be used on white metal. Furnished with counterbore if desired.

CONVERSION RINGS FOR "MAGIC CHEF" RANGES

Most satisfactory method for moving flame closer to cooking vessel on cone type low burner. Raises burner ½ inch.

G-4014 DIE HOLDER

For easier, faster, more accurate rethreading and cutting new threads. Especially useful for pilot tubes, top burner valves and the difficult-to-get-to oven burners. For all 1¾″ O.D. dies.

The Griffiths Engineering Department has kept pace with the increasing tempo of conversion programs to accommodate new gases and blends. All needed conversion parts and special tools are immediately available to you. WRITE FOR COMPLETE CATALOG

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psig and all ranges of pneumatic control pressures. Connections and take-offs may be made in standard electrical junction boxes and standard pipe or conduit clips may be used to fasten the cable to walls or ceilings. A tracer tube easily identifies corresponding tube ends. *Armortube Cable.* Bailey Meter Co., 1022 Ivanhoe Road, Cleveland, Ohio.

Industrial space heater

A new two-million Btu space heater, designed for large industrial applications, is said to heat an area from 16,000 to 24,000 square feet. It has twin heat exchangers arranged in the form of a "V" to scrub the heating surfaces with passing air. Diffusers giving control of air throw may be placed in any position, rotating 360°.

Ducts may be run from the outlets to adjoining rooms, and the unit may also be used as a central heating plant, with a plenum chamber in place of the four diffusers. The normal air output is 22,000 cfm, with an air intake velocity of 440 fpm. The fan is powered by a 10 hp motor. The unit can use either light fuel oil, with a pressure atomizing gun-type burner; heavy oil, using a horizontal rotary cup burner; or gas, using a power burner. It may also be equipped with a combination burner for instantaneous conversion of gas to oil or oil to gas. *Thermobloc Model 2,000.* Prat-Daniel Corp., South Norwalk, Conn.

Electronic dew point hygrometer

A new electronic dew point hygrometer consists of a polished metal mirror and an associated electronic servo-loop to maintain the mirror at dew point temperature, and thereby provide a primary laboratory standard for the measure- of isobaric condensation temperature. It will continuously indicate or control, through the usual devices based on a thermocouple, the concentration of any component whose phase change will fog the mirror. The temperature can be any temperature within reach of a liquid air bath. A suitable train of these instruments and associated traps can be used to record the concentration of more than one component of a gas.

The unit is enclosed in a steel cabinet, approximately 14″ x 16″ x 18″. All controls and connections are on the front panel.

Range, ambient to 170° C.; response, at least 5° C per sec.; Accuracy, at least ± .1° C; controls, power switch, condensate thickness, photocell bias, amplifier gain; input power, 117 volts, 60 cycle, single phase; 175 watts average, 200 watts maximum. *Electronic Dew Point Hygrometer.* Burton Mfg. Co., 11201 W. Pico Blvd., Los Angeles, 64.

Heater gas control

A new development combining modulating and snap-action gas valves in one unit for fully automatic operation of space heaters, wall heaters and floor furnaces has been announced. The device includes thermostat and valve action in a single fixture installed in the gas supply line.

Control of gas flow to the burner eliminates manual on-and-off of heater and is said to prevent overheating. Basically two valves built into one casting with a thermostat governing the automatic operation, the new control gives the effect of two different burner sizes. One will work automatically from completely off to a minimum pre-set flame providing proper ignition of gas. When heat requirements exceed the input of the minimum flame, the modulating valve increases the gas supply from the minimum to full on. Temperatures desired are set with a knob atop the unit.

Sensing element is liquid-filled. It may be located away from the radiance of the heater, to provide more accurate measure of over-all temperature. For room and wall heaters: model V5151A. For flow furnaces: model V5151B. *Modusnap Thermostatic Gas Valve.* Appliance Division, Minneapolis-Honeywell Regulator Co., Philadelphia 44, Pa.

Leak repair clamp

For permanent repair on oil and gas lines, a new high-pressure leak repair clamp has been developed. Designed for repairing corroded pipe sections, leaks, splits and breaks which do not extend fully around the circumference of the pipe, the clamp is said to be efficient and easy to install. Bolts slip through cone-shaped, extra large bolt holes. Bolts are drawn up as needed to stop leak. A flexible corrosion resistant band is claimed to assure permanent repairs even on out-of-round and damaged pipe. Clamp has neoprene rubber gasket, is constructed with bands of 36 ounce heavy copper, 18 gauge galvanized iron or 20 gauge stainless steel. These clamps are manufactured for all pipe sizes in widths 3″, 6″, 7½″, 10″, 12½″ and 15″ or in greater widths to particular specifications. *Baker HiPressure Leak Repair Clamps.* R. H. Baker & Co., Inc., 2070 E. Slausen Ave., Huntington Park, Cal.

Safety air hose

A safety air hose for use on concrete busters, breakers, jack hammers and similar pneumatic equipment has built-in protection from accidental contact with power lines. A braided copper ribbon of 832 strands forms a high current-carrying medium which is securely bonded in the actual carcass of the oil-proof, abrasion- and heat-resisting hose. *Invincible Safety Air Hose.* Mercer Rubber Corp., 66 Reade St., New York 7, N. Y.

Semi-portable oxygen generator

A new semi-portable oxygen generator that will produce high purity oxygen at reported savings to 50 per cent has been announced. The generator is a compact unit requiring a space of 8′ x 7′6″ x 10′. The machine has no dependence on chemicals and nothing is consumed except air and

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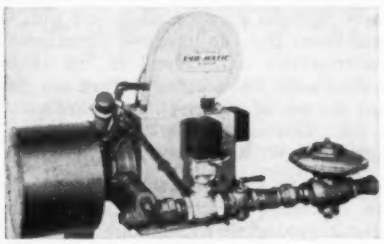
power. Models are contemplated in the size range from 0.5 to 12 tons daily capacity of oxygen of 99.5% purity. The manufacturer claims that the generator can produce high purity oxygen at an operating cost of five to ten cents per 100 cubic feet, depending on running time. This is equivalent to $12 to $24 per ton. Heart of the new oxygen generator is a series of automatic reversing heat exchangers which eliminate the expense of chemical purification of air.

Combination gas-oil burner

A new industrial and commercial burner designed for oil and gas has been announced. Changeover from one fuel to the



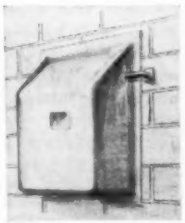
other is made instantly with a switch. This new combination burner is said to make it possible to alternate fuels according to availability, economy or suitability. Among the features, says the manufacturer, are dual atomization, rotary flame action, simplicity of installation, all internal wiring and piping supplied, space-saving design, adjustable burner support, electronic flame failure control. Mixed, natural or LP gas, or number 1, 2, or 3 fuel oil may be used. Either gas or oil can be burned without induced secondary air. *Fyr-Matic Gas-Oil Burner.* Eclipse Fuel Engineering Co., 1108 Buchanan St., Rockford, Ill.

Warm air furnace

A new oil and gas fired basement model forced warm air furnace with an output of 93,000 Btu, factory assembled, ready for installation, includes a blower and three-pass heat exchanger. The unit measures 20″ wide, 46″ long and 45″ high. Light green hammerloid enamel finish. *Model LB 90.* Delta Heating Corp., Trenton 8, N. J.

Gas meter cover

For localities where climatic conditions make it inadvisable to install gas meters and regulators directly on the ground, a new meter cover is attached to the side walls of buildings. Made of Zenaloy, a new material composed of glass fibers and polyester resins, these meter covers are said to be strong and light. They are claimed to protect the regulator from vent freeze-ups; the entire set from deterioration by the elements; make painting or other maintenance costs unnecessary; and nest for shipment and storage. *Zenaloy Meter Covers.* Gordon Z. Green Co., 2335 E. 8th St., Los Angeles 21.



Pipe and bolt threading machine

A pipe and bolt threading machine, which the manufacturer has just announced, includes a new type of self-contained die head said to reduce cost and make notable savings of work and time. The new head is instantly adjustable to thread 1″ to 2″ pipe, including over and under size, regardless of position of quick-opening lever and without removing dies or die head from the machine. The improved heads, one for ¼″ and ⅜″ and one for ½″ and ¾″, offer this same instant size change in the machine. Heads for ⅛″ to 2″, and bolt die heads, ¼″ to 2″, also are available. All tools cut and ream independently, close to the chuck, and swing up out of the way when not in use. Thread oil system is entirely concealed. Thread and length gauge has large numerals. Chuck has six adjusting pinions. Motor supplies ample power even for pipe to 12″ when geared tools are used, is forward-reverse, 115 volts, 25 to 60 cycles, AC or DC, single phase. *Ridgid 500 Threading Machine.* The Ridge Tool Co., Elyria, O.

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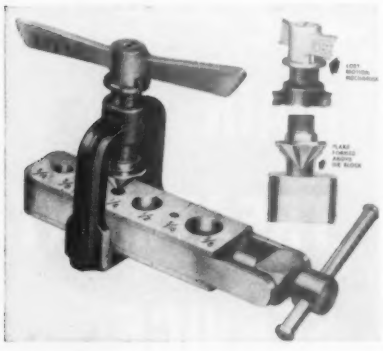
after it has been formed, will make 45° flares on 3/16", ¼", 5/16", ⅜", ½" and ⅝" od. tubing for standard SAE flared



fitting joints. The automatic burnishing action is provided through the use of a lost motion mechanism in the yoke which disengages the feed during the first revolution when backing off the cone. This causes the cone to burnish the flare with a highly polished finish.

The original wall thickness of the tubing is said to be maintained at the base of the flare.

The steel flaring bar is of the sliding segment type and has a single screw at the end with rod handle for leverage, which provides quick, easy tightening. *No. 500-F Rol-Air Flaring Tool.* The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago 7.

NEW BULLETINS

LOW PRESSURE BALANCED VALVE REGULATORS. This bulletin describes regulators with interchangeable inlet bowls that adapt the regulators to a wide range of flow rates. The operations of the regulator, the interchangeable inlet bowls and valve levers are described. Capacity tables and dimensions are given for selection purposes. *Bulletin No. 1082.* 12 pp. Rockwell Mfg. Co., 400 No. Lexington Ave., Pittsburgh 8.

INSTRUMENT PRESSURE CONTROL SYSTEM. This bulletin describes an instrument pressure control system that considers operating conditions requiring a high degree of sensitivity and control accuracy. Accuracy within one per cent is claimed. The advantages of instrument pressure control are described and applications given. Operation, range of throttling, and installation are discussed. The bulletin is fully illustrated and includes selection data. *Bulletin No. 1080 Rev. 1.* 12 pp. Pittsburgh Equitable Meter division, Rockwell Mfg. Co., Pittsburgh 8.

ADJUSTABLE FLOW VALVES FOR GAS AND AIR. According to this bulletin, the valves will produce gas and air flow rates of any desired characteristics from ten indexed dial positions. Single and dual valve assemblies are described and illustrated. Capacities are given in tabular form and correction factors for gas capacities are given in terms of specific gravity. *Catalog No. 713.* Hauck Manufacturing Co., 136 Tenth St., Brooklyn 15, N. Y.

TEMPERATURE CONTROLS. This bulletin describes in detail the operation of automatic temperature control, with a self-contained temperature-controlled valve coupled to temperature-sensitive tubes. Operating temperatures of the various models range from 300°F to 1,800°F. *Bulletin G-17.* 12 pp. Burling Instrument Co., 5 Vose Ave., South Orange, N. J.

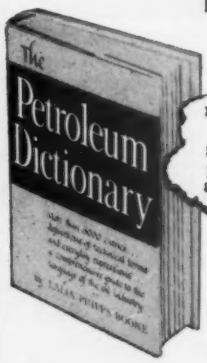
P-A-X BUSINESS TELEPHONE SYSTEM. This bulletin describes the uses and advantages of internal business telephone systems. Systems shown include one with ten telephones that can have two simultaneous conversations and extend to the largest system with 200 telephones that can have any number of conversations. *Bulletin 1735.* 8 pp. Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7.

PYR-O-VANE CONTROLLER. This new bulletin describes an electronic control that gives reproducible temperature control, for use in heat-treating shops, in forging or paint shops, in plastic molding, bakeries and other applications where continuous control are essential. *Sheet 114.* 4 pp. Minneapolis-Honeywell Regulator Co., Station 40, Philadelphia 44.

HYDROCRANE BULLETIN. Of interest to gas utility companies for the applications

AT LAST—

The petroleum industry has a dictionary of its own



acid treatment
A treatment by which asphalt is removed from petroleum in order to improve its end products. [D]
aclinic, adj.

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to digging, trenching, backfilling, hoisting and erecting, this bulletin, with more than 100 illustrations, describes a truck-mounted crane and its many attachments. *Bulletin H-U-1.* 24 pp. Bucyrus-Erie Co., South Milwaukee, Wis.

ELECTRONIC STRIP-CHART POTENTIOMETERS AND BRIDGE INSTRUMENTS. This bulletin gives information concerning new electronic instruments for recording and indicating variables such as temperature, pH, speed, voltage, smoke density which can be measured in terms of d-c current, voltage, resistance or capacitance. Pneumatic and electric operated control models are described. Charts and wiring diagrams show the principle of operation. *Bulletin No. P1245.* 36 pp. The Bristol Co., Waterbury 20, Conn.

TELSCO . . . FITTINGS FOR JOINING PLASTIC OR STEEL PIPE. This line of fittings is fully described and illustrated, with selection information. (See description under "New Equipment" on page 43.) Texas Lawn Sprinkler Co., Inc., 5422 Redfield St., Dallas.

LARGE CAPACITY GAS METERS. Measurement of large gas volumes, industrial or field loads, is discussed in this new bulletin. These large gas meters are of the diaphragm-type, designed for hourly rates to 10 Mcfh. In addition to full technical descriptions, the bulletin illustrates the measuring mechanism and its removability. Also, there are adequate dimension and specification tables, together with selection data. *Bulletin 1085.* 12 pp. Rockwell Manufacturing Co., Pittsburgh 8.

GAS INDUSTRY CALENDAR

May

12-13 AGA, NATURAL GAS DEPARTMENT, Biltmore Hotel, Los Angeles.
12-14 LPGA, CONVENTION AND TRADE SHOW, Palmer House, Chicago.
13-15 PENNSYLVANIA GAS ASSOCIATION, Wernersville, Pa.
14 NEGA, OPERATING DIVISION, Sheraton-Biltmore, Providence, R. I.
14 AGA, PAR COMMITTEE, Ahwahnee Hotel, Yosemite Valley, Cal.
14 AGA-ASME, METER SUBCOMMITTEES, Biltmore Hotel, Los Angeles.
15 AGA, EXECUTIVE BOARD, Yosemite Valley, Cal.
21-23 GAMA, ANNUAL MEETING, Broadmoor, Colorado Springs, Colo.
26-28 AGA, PRODUCTION AND CHEMICAL CONFERENCE, Hotel New Yorker, New York.
27-28 PCGA, COMMERCIAL AND INDUSTRIAL SALES CONFERENCE, Los Angeles.
27-29 SOUTHWESTERN GAS MEASUREMENT SHORT COURSE, University of Oklahoma, Norman, Okla.

June

5-6 AGA, RESEARCH AND UTILIZATION CONFERENCE, Hotel Statler, Cleveland.
8-12 CANADIAN GAS ASSOCIATION, Chateau Frontenac, Quebec City, Quebec.
9-13 NATIONAL FIRE PROTECTION ASSOCIATION, ANNUAL MEETING, Hotel Statler, New York.
10 PCGA, COMMERCIAL AND INDUSTRIAL SALES CONFERENCE, Portland, Ore.
16-19 INTERNATIONAL GAS CONFERENCE, Brussels, Belgium.
23-24 MICHIGAN GAS ASSOCIATION, ANNUAL MEETING, Mackinac Island, Mich.
23-24 NEW YORK-NEW JERSEY REGIONAL GAS SALES CONFERENCE, Hotel Monmouth, Spring Lake, N. J.

July

18 AGA, EXECUTIVE BOARD, (probably New York)

September

3-5 PCGA, Ambassador Hotel, Los Angeles.
7-9 WISCONSIN UTILITIES ASSOCIATION, MANAGEMENT CONFERENCE, Land O'Lakes, Wis.
11-12 MID-WEST GAS ASSOCIATION, GAS SCHOOL AND CONFERENCE, Iowa State College, Ames, Ia.
12 NEW JERSEY GAS ASSOCIATION, Hotel Monmouth, Spring Lake, N. J.

October

1-3 WISCONSIN UTILITIES ASSOCIATION, TECHNICAL AND SALES SECTIONS CONVENTION, Schroeder Hotel, Milwaukee.
20-24 NATIONAL METAL EXPOSITION, Philadelphia, Pa.
27-30 AGA, ANNUAL CONVENTION, Atlantic City, N. J.
28 AGA, EXECUTIVE BOARD, Atlantic City, N. J.

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NORWALK VALVE COMPANY
South Norwalk, Conn.

Alberta Board Submits Gas Data on Pacific NW Export-Okay

Together with the recommendation, last month, that Westcoat Transmission Company be granted permission to export natural gas from the Dominion to the U. S. Pacific Northwest, the Alberta Petroleum and Natural Gas Conservation Board submitted a considerable volume of substantiating data.

Report shows increased reserves

The Board found, based on its 1951 hearings into the matter, that the estimated proven reserves of natural gas in Alberta had increased from 4.7 trillion cubic feet as of January 1, 1951, to 6.8 trillion cubic feet at December 31, 1951. This increase in reserve, it said, was due in part to new discoveries, in part to further development of previous discoveries and in part to new data and new interpretations concerning previous discoveries.

The Board also found that with incentive for 400 to 500 wildcat wells per year, it could be expected that reserves would show a further increase of at least an additional one trillion cubic feet per year for the next eight to ten years. This was based on an average increase of 400 billion cubic feet in established reserves for each 100 wildcat wells. This figure is to be compared with the U. S. figure of 300 billion cubic feet per 100 wildcat wells.

The Conservation Board also found that the requirements for the 30-year period, 1952-through-1981, for the Province of Alberta was 4.2 trillion cubic feet, an increase in their estimate of 3.1 trillion cubic feet as of January 1, 1951.

Insuring reserves for Alberta

The Board a'so found that reserves of 6.5 trillion cubic feet should be held for insurance of Alberta's requirements. This would leave 300 billion cubic feet available for export.

The Board found that the only area from which gas might be exported, at the present time, would be the Peace River area in which the Board found reserves of 500 billion cubic feet. The Board stated that 200 billion cubic feet of these reserves should be retained for the use of the communities in the Peace River area and, therefore, left 300 billion cubic feet for export.

Westcoast Transmission Company, who was the applicant for export from the area, was designated as the company to take that gas from the Peace River area to the Pacific Northwest, at the rate of 42 billion cubic feet per year for five years—then take another look.

Westcoast's application asked for 42 billion cubic feet per year for the first two years, with indicated requirements of 74.3 billion cubic feet in the third year, 93.3 billion cubic feet each for the fourth and fifth years; ultimate yearly capacity of the line was set at 123 billion cubic feet.

Eastern Washington would not get gas

This would mean that in the initial stage the communities of Washington, east of the Cascades, would not be supplied with natural gas, at least not until the full development stage.

Exhibits filed with the Alberta Board indicate that natural gas requirements of the Pacific Northwest, including the so-called Inland Empire, would run from 34 billion cubic feet in the first year to 75 billion cubic feet in the fifth year.

Of these amounts 13 billion cubic feet in the first year and 16.4 billion cubic feet in the fifth year would be the requirements of the Inland Empire. 21.2 billion cubic feet and 40.4 billion cubic feet would be the requirements for the State of Washington in the first and fifth years, respectively.

Second year requirements indicate 48.7 billion cubic feet for the Pacific Northwest, which exceeds the amount granted to Westcoast Transmission for export.

Westcoast does not propose to serve approximately 14 billion cubic feet of the second year's load which constitutes the requirements of the Inland Empire, including Eastern British Columbia.

Current estimates are that the fifth year requirements of the Pacific Northwest will amount to better than 78 billion cubic feet per year. On that basis, the total requirements for a 25-year period would be practically 2 trillion cubic feet.

The 300 billion cubic feet of gas presently available for export from Alberta, according to Conservation Board findings, represents only one-seventh of the Pacific Northwest 25-year requirement.

While the Board found further that reserves reasonably might be expected to improve by probably one trillion cubic feet per year for the next decade, all this might not be available for export since the Province's own requirements presumably will increase in the interim. This is suggested strongly in the one-third increase in Alberta's estimated needs, in

(Continued on page 49)

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NEW BOOKS

HEATING, VENTILATING AND AIR CONDITIONING GUIDE, 1952.

This 30th edition of the leading reference source in its field has been reviewed and a number of timely revisions have been made. The 50 chapters are grouped under these section titles: I Fundamentals, II Human Reactions, III Heating and Cooling Loads, IV Combustion and Consumption of Fuels, V Systems and Equipment, VI Special Systems, VII Instruments and Codes.

Latest editions of all codes have been included in the enlarged list of codes and standards.

Attention has been given to methods of preventing moisture damage in buildings. New materials are listed in the tables of conductivities and conductances; revised values are shown for some previously listed materials.

The tables of unit conductances for thermal convection and methods for computing radiant heat exchange for various conditions conform with latest research results.

Average winter temperatures for October to May are listed in the table for 316 United States and 16 Canadian cities.

The section on residential chimneys places emphasis on the performance and selection of low-height chimneys for basementless and other low buildings. A new chart for determining gas appliance vent and chimney sizes shows recommendations of American Gas Association.

The oil and gas fuels section includes more information on properties and combustion data.

Boiler rating information has been brought up-to-date. Information on baseboard radiation has been extended. Btu ratings have been added to the previous equivalent direct radiation ratings.

1520 pp. The American Society of Heating and Ventilating Engineers, 62 Worth St., New York 13. $7.50.

INDUSTRIAL HEAT TRANSFER. By F. W. Hutchinson. Problems in heat transfer between industrial fluids involve complex formulas and determination of viscosity, specific heat, and density. Feature of this book is 128 working charts from which a direct solution of heat transfer problems can be obtained for 70 industrial fluids such as air, acetylene, sulfur dioxide and water. Graphs are said to be equal in accuracy to the equations from which they are derived.

Pages opposite graphs give the related equations, limitations, extension, and discussion references. Examples are given and solutions shown on graphs. Chapters consist of: fundamental theory, equations, and graphs.

Chapters: conduction, radiation, convection, combined heat transfer, and forced convection. A textbook for students and a working handbook for engineers. 336 pp. The Industrial Press, 148 Lafayette St., New York 13, N. Y. $6.00.

Written Gas Service Contracts Hold In Disputes About Verbal Promises

According to a late higher court decision, a consumer of gas who signs a contract agreeing to pay special higher rates is obligated to pay the specified higher rates, notwithstanding verbal promises or contracts to the contrary, made by the gas company's officials or employes.

Consumer bound by written contract

For example, in Arkansas Louisiana Gas Company v. Blanchard, 46 So. (2d) 646, the testimony showed these facts: the Arkansas Louisiana Gas Company, owning and operating a gas utility, sells natural gas to domestic, commercial and industrial customers. It formulates, adopts and enforces rules and regulations, including schedules of rates within the purview of orders of the state commission. The company and a consumer signed a written contract containing this clause, "Separate customer premises shall be metered and billed separately even if under common ownership, and combined metering or billing shall not be permitted. Such premises shall be considered separate when not on the same tract, or when each is a complete 'unit.' Tracts of land separated by public streets, roads or alleys shall be considered non contiguous tracts."

Through error of the gas company's employees, one gas meter was installed and read for two separate properties. The schedule of rates in the contract stated that the more gas consumed, the cheaper it becomes.

After several years the gas company's officials discovered that Blanchard had been paying for gas at reduced rates since only one meter registered the gas consumed on the two properties. The gas company sued Blanchard to recover $441.51, the difference over these years between the amount paid by Blanchard and the amount he should have paid if the two properties had separate meters. Blanchard argued that he should not be liable, because an official of the gas company verbally promised that Blanchard would be billed for gas as though there were only one building.

It is interesting to note that the higher court held that this verbal promise or agreement did not stop the gas company from recovering a higher rate based on the fact that the buildings are separate.

Also, this court held the company's rule valid which required owners of separate properties to pay higher rates than if a single meter is operative for the different properties, saying, "The assailed rule is not unreasonable on its face, and a strong presumption arises therefrom that it is reasonable in its operative effect and not discriminative."

Furthermore, this court held that a gas consumer always is obligated under a written contract he signs for service and rates, irrespective of verbal contracts. In this respect, the court said, "It is well to note that the contracts involved herein were freely signed by the defendant (Blanchard) who, the law presumes, was cognizant of the import of all of its provisions, although as a fact, he may not have been."

—L. T. P.

Alberta Board Submits Data on Pacific NW Export

(Continued from page 48)

the course of only the past year, in the Board's own figures.

Northwest distributors' position

Second, but every whit as important, is the fact that up to the present time it has been the position of all the distributors in the Pacific Northwest that all should receive gas at approximately the same time at approximately the same rates.

Retail gas distributing companies in the area told AMERICAN GAS JOURNAL that their position in this respect was not changed at press-time of this issue.

Third, there is the basic economic matter of bringing Canadian natural gas into the Northwest at a price which will enable it to compete with Bunker C fuel oil for boiler use if favorable load factors are to be maintained (see April 1952 issue).

FPC hearings scheduled

And last, but certainly not least, there is the question of obtaining a Federal Power Commission certificate of convenience and necessity for construction of the United States portion of the Westcoast line.

FPC has scheduled hearings on this matter to commence June 16. These promise to be drawn out because of the many varied interests involved, including both pipe lines which competed unsuccessfully for the right that the Canadian Board granted to Westcoast and, also, the oil, railroad, union and other interests which fear the threatened natural gas invasion of their domain.

—J. F. F.

PROGRAM—17TH ANNUAL MEETING

GAS APPLIANCE MANUFACTURERS ASSOCIATION

BROADMOOR HOTEL, COLORADO SPRINGS, COLORADO

Wednesday, May 21

8:30 AM Registration

9:30 AM Meetings
- Domestic Gas Range
- Gas Clothes Dryer
- Gas House Heating & Air Conditioning Equipment
- Gas Meter & Regulator
- Gas Water Heater
- Industrial Gas Equipment

12:30 PM General Session Luncheon
- Opening Remarks
  Louis Ruthenburg
- "What Happens to Your Dues?"
  Lyle C. Harvey
- Report of Nominating Committee
  E. Carl Sorby
- "Indications Are That . . ."
  H. Leigh Whitelaw
- "What's Been Going on Here?"
  Gerry Swinehart

2:30 PM Meetings
- Industrial Gas Equipment
- Gas Furnace

3:30 PM Gas Floor Furnace

6:30 PM Dinner
- "Memo to the Chief Executive"
  Frank C. Smith

Thursday, May 22

8:00 AM Marketing Committee Breakfast

8:30 AM Registration

9:00 AM Meetings
- "CP" Manufacturers Gas Valve
- Controls and Related Accessories
- Direct Heating Equipment
- Gas Incinerator
- Gas Conversion Burner

11:00 AM Gas Boiler

12:30 PM General Session Luncheon
- President's Address
  Louis Ruthenburg
- "Together We Stand"
  Charles E. Bennett

2:30 PM Meetings
- Vented Recessed Heater
- Unit Heater
- Relief Valve

All members of the Convention are invited to attend
- "Marketing and Your Business"
  Donald R. Meckstroth
- "Management Looks at Market Research"
  Cecil M. Dunn
- "Marketing Spots Before Your Eyes"
  A. F. Smith

6:30 PM The President's Dinner
- Meritorious Service Award Presentations
  Louis Ruthenburg
- Address by
  Henry H. Fowler

Friday, May 23

7:59 AM Gild of Ancient Supplers Breakfast

8:30 AM Registration

9:00 AM "Dealer Relations General Session"
- *Louis Ruthenburg*
- "Seven Steps to Greater Sales"
  Herbert D. Bissell
- "Retailing's Role in a Free Economy"
- "The Gas Industry's New Approach to the Dealer"
  W. Daniel Williams
- "New Ways to Sell Modern Gas Ranges"—A sales training—sale making sound slide film.
  Julius Klein
- "The Golden Stream"—A gas water heater colored sound-slide film.
  J. P. Hutchinson

Ladies' Entertainment

WEDNESDAY, MAY 21

12:30 PM Luncheon

2:00 PM Recreation—Canasta or Bridge, Shuffle Board, Putting Contest, Golf, Tennis, Swimming

4:30 PM Cocktails

6:30 PM Dinner

9:30 PM Entertainment and dancing

THURSDAY, MAY 22

10:30 AM Sightseeing motor tour of surrounding country

5:00 PM Cocktails

6:30 PM Dinner

9:30 PM Entertainment and dancing

FRIDAY, MAY 23

12:00 Noon LUNCHEON

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With the rising tide of interest in gas-fired incinerators, brought about largely through the well-planned and vigorously-executed sales programs of a few gas utilities, the specialized treatment of this builder of year 'round gas loads has appeared in some consumer publications. Here, Public Service Company of Colorado tells newspaper readers to *"see your dealer* or a representative of this company about a gas-fired incinerator."

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If so...it's time for a
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Refuse placed in a gas-fired incinerator is dried, burned, and reduced to a powdery ash. Automatic controls take over operation after being set. Pilot light ignites burner. Gas is turned off at end of burning time.
About a penny a day takes care of the operating cost of a gas-fired incinerator. It's real economy in solving your garbage and trash disposal problems.
Today, see your Dealer or a Representative of this company about a Gas-Fired Incinerator
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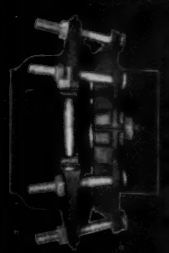

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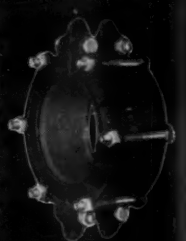

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